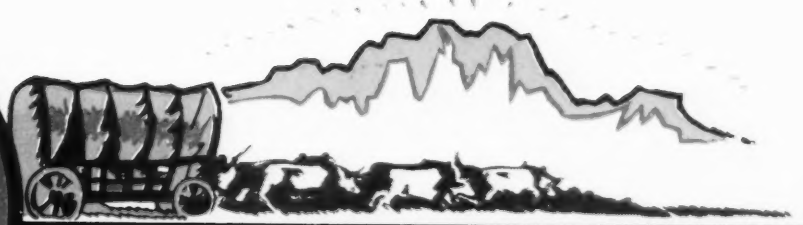


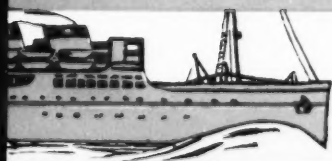
# AMERICAN ARTISAN

THE WARM AIR HEATING  
AND SHEET METAL JOURNAL

50<sup>th</sup> ANNIVERSARY



DEC 20<sup>TH</sup>  
1930



PROGRESS AND  
PROSPERITY IN 1931

# Turn Over a New Business Page

## JONES NATIONAL and NATIONAL BASE- BOARD REGISTERS

*Will Give You the "Lift" You  
are Looking for in 1931*

Better Registers, Better Finishes, Better Designs are offered in U. S. Registers whether Baseboard, Sidewall or Floor Registers, or Faces, Grilles or Screens.

Do not be misled by claims of some manufacturers. We do not claim to furnish ALL of the registers used, but we do truthfully state that we are exclusive manufacturers of the world's best lines of registers and are not affiliated with or owned in any way by any producer of furnaces.

A Half Turn  
of Button  
Fastens Center  
to the Frame

Center is  
held in  
place by  
two lugs  
in here

A patented SEALING  
STRIP that SEALS the  
JONES-NATIONAL  
REGISTER to the box



*We Are Fair to All and Partial to None*

*For Your Approval  
the PANAMA—A Real Design  
for those who prefer a  
beautiful Bar Type Pattern*



Steel Floor Registers  
U. S. Special Steel  
Faces  
U. S. Steel Grilles  
National Dampers  
Damper Clips  
Tail Pieces  
Furnace Accessories of  
All Kinds

*Also the NATIONAL—  
A Design that is  
improved with age*



*See Our Catalog  
No. 21*

**UNITED STATES REGISTER CO., BATTLE CREEK, MICHIGAN**

General Office and Factory

MINNEAPOLIS, MINN.  
2109-2115 Cedar Ave.  
DENVER, COLO.

Branch Offices and Factories  
KANSAS CITY, MO.  
330-336 W. 5th St.

ALBANY, N. Y.  
5-9 Jackson St.  
LOS ANGELES, CALIF.



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IN

# CARLOAD BUYERS

*We Have a Special Proposition for You—Write for Details*



**THATCHER  
QUALITY  
assures  
SATISFIED  
CUSTOMERS**

**SATISFIED  
CUSTOMERS  
will  
INCREASE  
YOUR SALES**

**THATCHER METEOR FURNACE**

Is your work finished when you've packed your tools and left the job? If you install Thatcher Furnaces it is, for Thatcher Dealers know they will not be called back to make minor changes and adjustments.

Thatcher experience—since 1850—has developed a line of Warm Air Furnaces of such qualities and workmanship, that their installation is a quick and easy matter.

Their efficiency is equally high and their economy in operation has long been famous.

If you act now, you will be money ahead a year from now. Prove it to yourself by installing Thatcher Furnaces in 1931. Your installations will take less time, your complaints will be fewer, and your collections easier. And think of the many friends you will make. Write for catalog and prices.

*Makers of the Celebrated Thatcher Tubular Furnaces*

**THE THATCHER COMPANY**

Newark, N. J.

341 North Clark Street, Chicago

# THATCHER

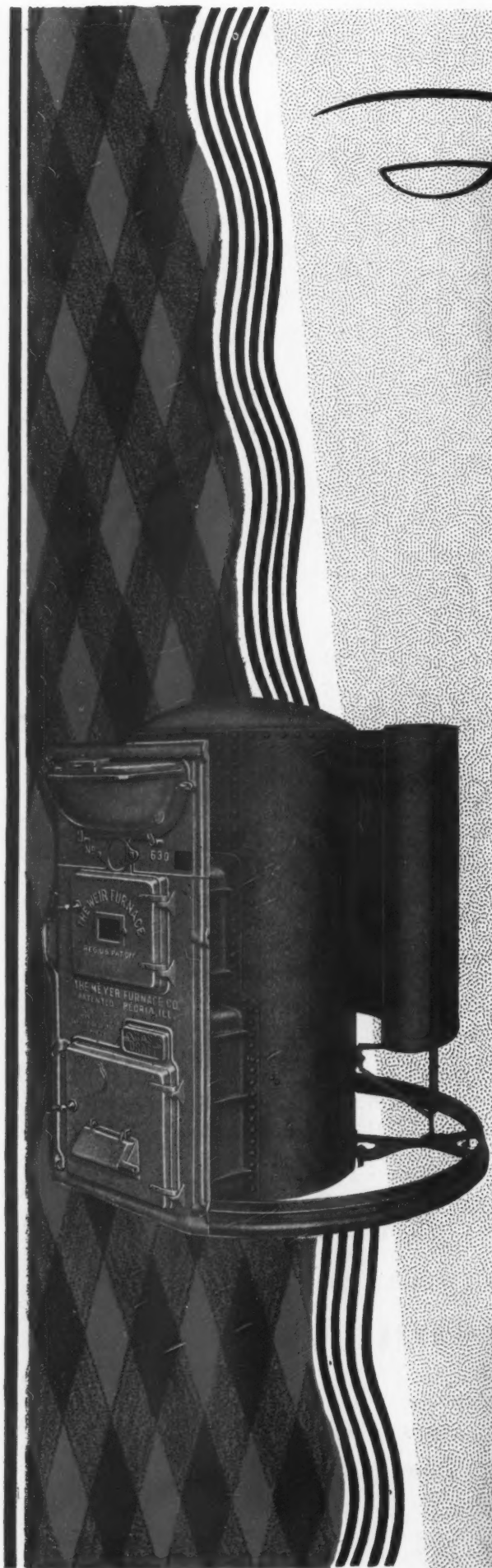
**BOILERS-FURNACES-RANGES**

Published Every Other Week by Porter, Spofford, Langtry Corp., 139 North Clark Street, Chicago, Illinois. AMERICAN ARTISAN—the Warm Air Heating and Sheet Metal Journal—entered as second class matter, January 29, 1930, at the Post Office at Chicago, Illinois, under the act of March 3, 1879. Formerly entered on June 25, 1887, as American Artisan and Hardware Record.

INDEX PAGES—58 and 146

[VOL. 99, NO. 26—\$2.00 PER YEAR] BUYERS' DIRECTORY—142 and 144





# The **WEIR** in its 49<sup>th</sup> year

**B**UT that fact, in itself, is not important!

The **IMPORTANT** part is that *during these 49 years we have been accumulating experience and knowledge that make us better able to produce the **BEST STEEL WARM AIR FURNACE MADE!***

We learned—years ago—facts in **STEEL** furnace manufacturing that some firms now in the business will discover at some time in the future.

We have pioneered in many features that some people used to disparage—and which are now “standard” features of the **STEEL** furnace industry.

For many years we have—day in and day out—hot-riveted the cast-iron fronts to the steel drums of the **WEIR**—and yet you will find many people today who say “it can’t be done.” (These rivets—put in under tons of pressure—don’t come loose and leave cracks for gas and dust leakage as bolts do!)

Every **WEIR** furnace has a serially-numbered plate giving, among other things, an honest rating or heating capacity based on the warm air heating research at the U. of I.

## The **MEYER** **Furnace Co.** Peoria • Illinois

Mention **AMERICAN ARTISAN** in your reply—Thank you!

## There is no substitute for experience

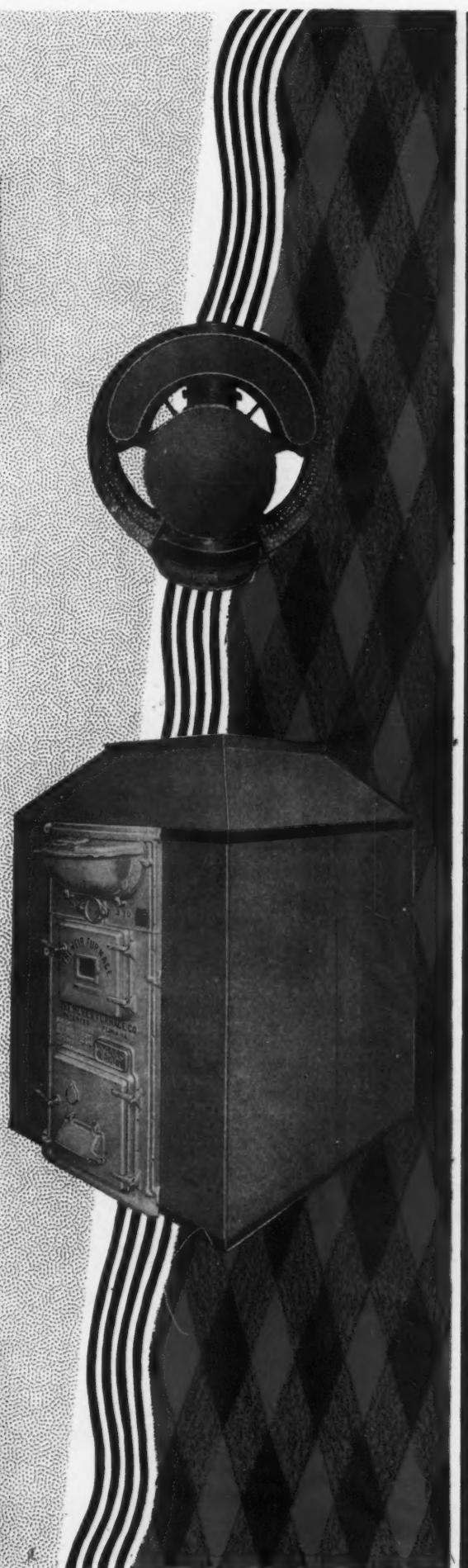
**T**HIS top view of the WEIR gives an exact picture of the size and proportions of the main drum and the EXTRA-HEAT radiator—and how thoroughly the WEIR keeps heat from escaping up the flue is best shown by laying your hand on the smoke pipe of a WEIR some wintry day.

But the Past—Like 1930  
—is Past and the Future  
is Calling to Us

We here at the WEIR plant have plans that we are not yet ready to divulge. A hint of some of them is given in the picture to the right where you see the WEIR *DE LUXE*—a square steel casing of double-wall construction and specially designed to house and hide and protect special equipment that makes it a *De Luxe* job in all that the name implies.

Other plans and announcements impend. We are making ready for 1931 on a scale—and with an enthusiasm—worthy of what we believe the year will bring. And with a slogan of "There Is No Substitute for Experience" we are fully expecting 1931 to be the biggest year WEIR DEALERS have known. We invite you to be with us.

# WEIR

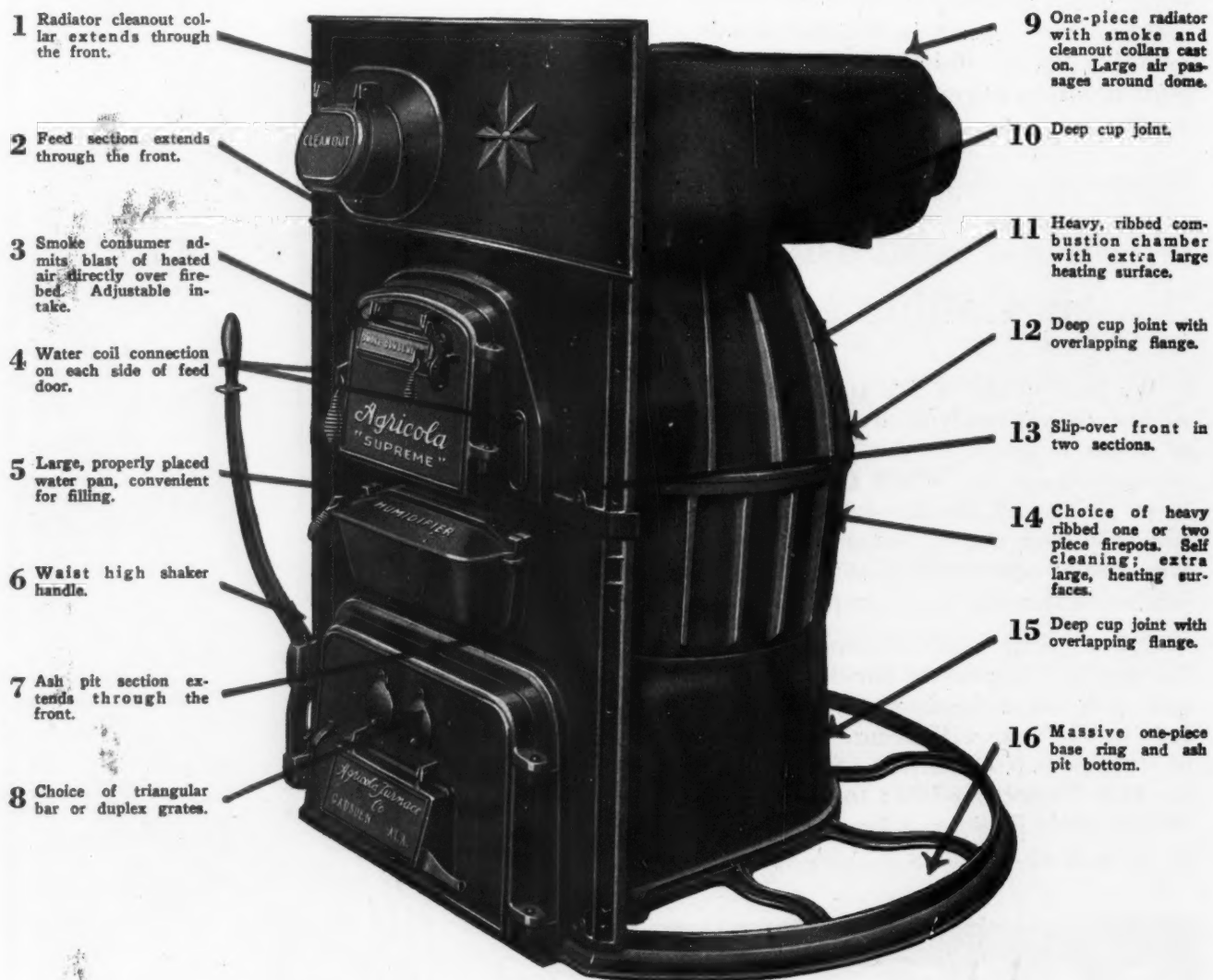


Say you saw it in *AMERICAN ARTISAN*—Thank you!

# The NEW "Supreme"

**Entirely New**, from base to cap, this up-to-the-minute furnace establishes a new standard in warm-air heating values! With it you can now satisfy the demand of the present market with "More for the Money."

Check these features—compare Agricola ratings with others—see this outstanding leader!



Each size of AGRICOLA "SUPREME" has a greater heating capacity. For example: the 24-inch size has a rating of 645 square inches (Standard Code Rating).

## AGRICOLA FURNACE CO., Inc.

Mention AMERICAN ARTISAN in your reply—Thank you!



# Agricola

## QUICKLY INSTALLED!

Speedy and trouble-proof installations insure increased dealer profits. Agricola "Supreme" was designed for fast and easy assembling. Deep cup joints, slip-over front, one-piece base, one-piece radiator, etc., are a delight to every installer.



This NEW furnace cuts service costs to a minimum. Ash pit and feed sections, as well as the radiator cleanout collar, extend entirely through the front. The front sections slip easily and securely into position. This dust, smoke and gas tight construction eliminates call backs and assures complete customer satisfaction.

It will pay you to investigate the AGRICOLA proposition for 1931.

*Write or Wire Today*

**Gadsden, Alabama**

**Principal Cities**

*Say you saw it in AMERICAN ARTISAN—Thank you!*

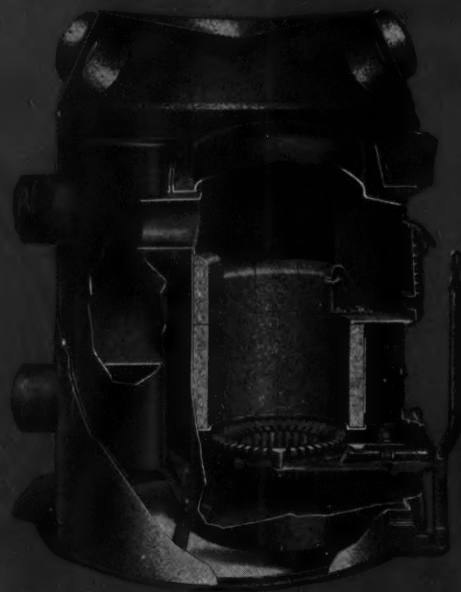
# 1931 *and* SUN WARM-AIR



1000 Series Cast Furnace. Has every new feature—every improvement that you would expect to find in such modern heating plant.



"C" Series Cast Furnace. Unsurpassed in heating ability and long life. A high caliber furnace at the cost of an ordinary product.



Sunbeam Steel Furnace, the outstanding innovation in Steel Furnace design. Better for burning coal; better for burning oil.

Mention AMERICAN ARTISAN in your reply—Thank you!



# BEAM

## FURNACES

The Sunbeam Dealer Proposition for 1931 is designed to supply the demand of heating contractors for greater profits. Here are some of the points which have attracted thousands of dealers.

**A Complete Line** A complete line of quality heating plants; a furnace—cast or steel—for every requirement and every kind of fuel, resulting in larger quantity discounts, lower freight rates and the convenience of having a single source of supply.

**Low Price** Consistently low prices made possible by volume production, scientific manufacturing methods and tremendous purchasing ability.

**Quality** Sunbeam Furnaces—cast and steel—have every worth-while feature that can be desired. In addition, they embody numerous innovations found in no other heaters.

**Easier to Sell** There is no profit in any furnace until it is sold. Sunbeam provides unusually productive equipment for salesmen; proven merchandising plans; and advertising programs that locate prospects.

**Better Time Payment Plan** You cannot obtain a satisfactory volume of the high-profit replacement business unless you offer deferred payments. The Sunbeam plan is operated on a non-profit basis for the sole purpose of making these advanced furnaces easier to sell.

Before you make any commitments for 1931, learn what the world's largest makers of heating equipment have to offer you. Compare it with your present proposition when there is no one to influence or bother you. There is no obligation.

A minute of your time to fill in the coupon and address an envelope plus a two cent stamp may prove to be the insignificant investment that returns many thousands of dollars to you annually.

**THE FOX FURNACE CO., Elyria, Ohio**

*A Division of*

**AMERICAN RADIATOR & STANDARD SANITARY CORPORATION**

**THE FOX FURNACE CO.**

We are willing to investigate your claims and compare your 1931 Dealer Proposition. Please send complete information at once.

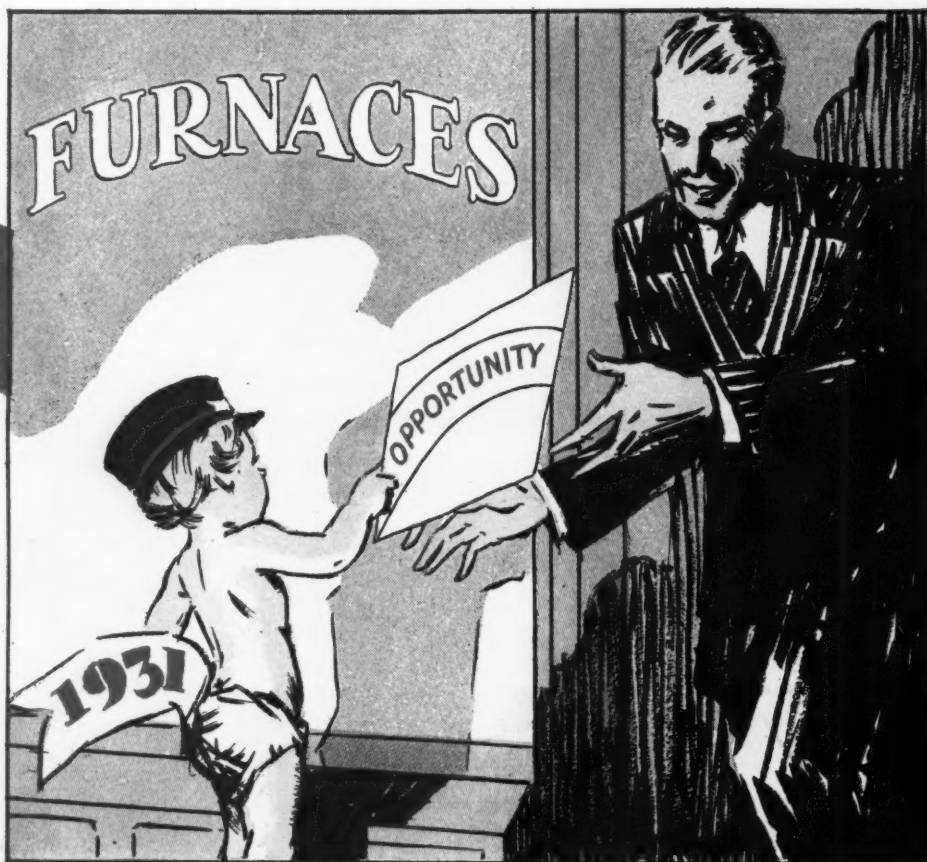
Name .....

Address .....

A-1

Say you saw it in *AMERICAN ARTISAN*—Thank you!





## The NEW YEAR brings New Opportunity to your door . . . . .

The 1930 depression, like every cloud, has a silver lining. It means a *bigger* 1931. People who bought only what they needed in order to get by will have to purchase heavier this coming year. In your business, people who patched and made temporary repairs on their heating systems will have to replace worn-out equipment before another Winter rolls around.

This is true in every line of business. 1931 cannot be anything but a year of bigger buying and greater prosperity. These facts

are fundamental. Knowing in advance that 1931 is going to be a good business year, you can be prepared to take advantage of this golden opportunity.

Tie up now with the furnace line that offers you the greatest amount of permanent profits, and the type of service that enables you to build up a list of satisfied customers. Look over the Front Rank Franchise. Investigate the extra features of service that Front Rank offer you. Write, today, for the details of the Front Rank 1931 Selling Plan.

# 1888 . . . . 43 YEARS OF

Mention AMERICAN ARTISAN in your reply—Thank you!

# Here is what Front Rank offers you for 1931!

## A Heating System

... designed by expert heating engineers, it embodies the latest practical improvements. For instance—it is the only furnace having triple protection against gas leakage. It is riveted, *caulked* and **WELDED**. It is built of copper bearing steel—does not need a direct draft damper, nor any other freak feature. There are two openings from dome to radiator, and the bottom of the radiator is a one-piece casting, easily cleaned. Its feed and ash pit pouches extend thru the casing. It has longer fire travel and more radiating surface than ordinary furnaces, either cast or steel.

... the De Luxe Super Air model gives you forced air circulation, automatic humidifying and temperature controlling devices, air filters, ozone diffusing machine, and other complete air conditioning features.

... proved to be 80 per cent efficient, using gas, oil, coal, or coke fuels—a feature few other furnaces can claim.

... backed by an organization with 43 years of experience in the designing, constructing, and installing of heating systems.

... that is enthusiastically endorsed by over 100,000 satisfied users.

... with an engineering service upon which you can draw in the planning and installing of heating systems.

... that you can sell with an absolute factory guarantee of satisfaction.

... that has been, and is being used in structures costing from \$5,000 to \$50,000.

*Write now for the details of the FRONT RANK Franchise and the FRONT RANK 1931 Selling Plan.*



**Langenberg Mfg. Co.**  
4545 Euclid Ave.      Saint Louis

**CONSTANT ADVANCE.. 1931**

*Say you saw it in AMERICAN ARTISAN—Thank you!*



# The TITAN-1200-FURNACE

A HIGHER CODE RATING—A NEW GRATE DESIGN

*Mention AMERICAN ARTISAN in your reply—Thank you!*



IN ANNOUNCING THE **TITAN**—SERIES 1200—WARM AIR FURNACE AS THE MOST ADVANCED CONSTRUCTION—THE GREATEST ACHIEVEMENT IN THE HEATING INDUSTRY IN MANY YEARS—WE ARE CONSCIOUS OF THE EXTENT OF OUR CLAIMS. YET THE FURNACE WE OFFER BEARS OUT THESE CLAIMS TO THE FULLEST. STARTING WITH A FURNACE RECOGNIZED AS ONE OF THE BEST—THE TITAN SUPERHEATER—OUR ENGINEERS HAVE BEEN AT WORK FOR THE PAST THREE YEARS, UNDER ORDERS TO DESIGN AND BUILD THE VERY BEST FURNACE EVER MADE. "THIS FURNACE MUST RANK, AS A HEATER, WITH CADILLAC OR PACKARD AS AUTOS—ABSOLUTELY THE FINEST THAT ENGINEERING SKILL CAN PRODUCE." SUCH IS THE TITAN 1200 — WITH A HIGHER CODE RATING THAN OTHER FURNACES ITS SIZE AND TYPE—A STRIKINGLY NEW DESIGN, COMBINATION GRATE OF MUCH LARGER AREA. ASK FOR DETAILED CIRCULAR IF YOU WANT TO SELL THE BEST FURNACE ON THE MARKET TODAY.

Standard Foundry and Furnace Co., De Kalb, Illinois

# Again WATERBURY Leads the Way-- Another Step Forward In Seamless Furnace Construction



*Waterbury offers dealers a unique Merchandising Sales Plan, that helps them make sales and build a profitable, permanent business. It is a part of the Waterbury Franchise. Ask about it.*

Now comes a *new* Waterbury, with added distinctive features found in no other furnace. The body and front is formed from a single piece of heavy steel, making it even more serviceable than ever before. Clean, properly humidified warm air heat, healthful and comfortable, is not only assured, but **GUARANTEED** by this permanent gas-tight construction. And of course, all steel parts are unconditionally guaranteed for ten years.

A new catalog containing complete information and mechanical data of the new Waterbury Line is ready. Write for a copy.

## The Waterman-Waterbury Company

1122 Jackson Street N.E.

Minneapolis, Minn.

*Complete Stock Carried In*

PHILADELPHIA

YAKIMA

SAN FRANCISCO

PITTSBURGH

CHICAGO

KANSAS CITY

*Say you saw it in AMERICAN ARTISAN—Thank you!*

# WISE

A Single Reliable Supply Source

for **3** Quality Type  
COAL AND GAS  
FURNACES

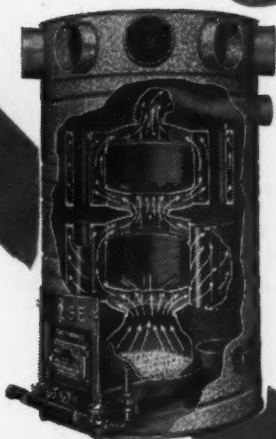


#### Wise 20 Series Cast Furnace

The Wise 20 Series Return Flue Radiator Type Furnace boasts an exclusive patented radiator construction which eliminates the objectionable dirt collecting and clean out nuisance of the ordinary flue types. Feed chamber and top radiator are constructed to allow communication between them bringing the opening of the fire flues of the radiator directly into the feed chamber.

#### Wise Super-Efficient Gas Furnace

The Wise Gas Furnace was designed by engineers who through long experience are proficient in the art of warm air furnace building and in the circulation and proper distribution of warm air for heating. The accompanying illustration reveals the unique but scientific construction which provides for efficient utilization of the heat units, the disposition of radiating surface and a form of construction for efficient and economical application of warm air heating.



#### Wise Open Dome Cast Furnace

The Wise 40 Series Open Dome is the highest grade furnace of this type made.

It has a cellular one-piece firepot which supports an evenly distributed air blast, assuring complete combustion.

It has an Elbow Shaped Flue Collar on the inside of the radiator turned up so the heat within the radiator must follow the castings to the top before entering the flue. Notice the heavy castings, ribbed firepot, shaker handle and correct design.



*Wise dealers have profited and satisfied their customers with Wise furnaces for over thirty-seven years. Write for catalog No. 23 which illustrates these three quality furnaces in detail. Progressive dealers in open territories can secure valuable exclusive agency—ask about it NOW.*

**THE WISE FURNACE CO. ♦♦♦ AKRON, OHIO**

**COAL and GAS**

# FURNACES

Mention AMERICAN ARTISAN in your reply—Thank you!





## WESTERN

The sturdy Western Steel Furnace has won its place in the high esteem of home owners throughout the country by its long-time service records plus its ready adoption of up-to-the-minute heating methods.

### A Western Gas Furnace

After the first of the year there will be added to the line a new Western, a gas burning furnace with all the quality and practical dependability of the old. Watch for further announcement in January.

130 Commonwealth Ave. — Duluth, Minn.

## WESTERN STEEL PRODUCTS CO.

#### Group One

Pittsburgh, Pa. — *Pittsburgh Furnace Parts Company*  
 Ravenna, Ohio — *Ravenna Furnace Company*  
 Cincinnati, Ohio — *Nichols Furnace Repair Company*  
 Atlanta, Ga. — *Moncrief Furnace Company*

#### Group Two

St. Louis, Mo. — *MacRoy Supply Co.*  
 Kansas City, Mo. — *Kansas City Furnace Co.*  
 Duluth, Minnesota — *Marshall-Wells Co.*  
 Omaha, Nebraska — *A. Y. McDonald Mfg. Co.*  
 Lincoln, Nebraska — *A. Y. McDonald Mfg. Co.*  
 Sioux City, Iowa — *A. Y. McDonald Mfg. Co.*  
 Minneapolis, Minn. — *A. Y. McDonald Mfg. Co.*  
 Fort Dodge, Iowa — *Leighton Supply Co.*  
 Fargo, N. D. — *Fargo Cornice & Ornament Co.*

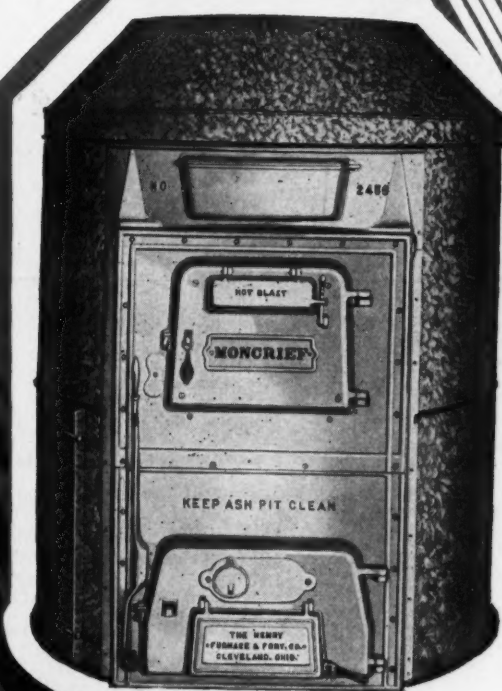
#### Group Three

Spokane, Wash. — *Western Steel Products Co., 228 Pacific Ave.*  
 San Francisco, Cal. — *Pacific Sheet Metal & Furnace Co.*  
 Winnipeg, Man. — *Marshall Wells Co.*  
 Saskatoon, Sask. — *Wood-Vallance Co., Ltd.*  
 Regina, Sask. — *Wood-Vallance Co., Ltd.*  
 Edmonton, Alta. — *Marshall-Wells Alberta Co., Ltd.*

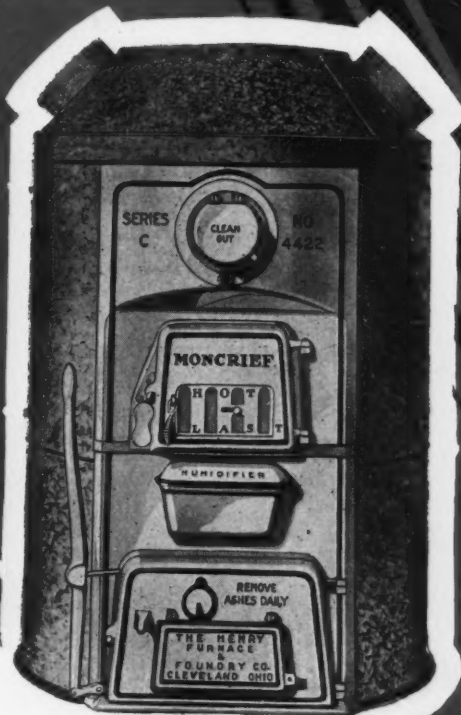
Say you saw it in *AMERICAN ARTISAN*—Thank you!

# MONCRIEF FURNACES

THE SERIES  
"C"



The New  
Moncrief  
Steel  
Furnace



**T**HE MONCRIEF line is always expanding, affording greater values, broader service. You will do well to depend on Moncrief for all your needs in 1931.

*(We supply everything used  
in a warm air heating job)*

**THE HENRY FURNACE & FOUNDRY CO.**  
**3471 EAST 49th STREET     ▲ ▲ ▲     CLEVELAND, OHIO**

Mention AMERICAN ARTISAN in your reply—Thank you!

## Lennox Offers the world's most complete line of steel furnaces



### Including—

Standard soft coal model with vertical smoke travel  
H.C. type for burning hard coal, coke and oil  
Oil Conservator furnace with special oval radiator  
Wood furnaces in all sizes and heights for burning any length of wood up to 48"  
Heavy duty types for church and school house heating  
Mammoth Hercules with long fire box and double radiators for handling heat loads up to 800,000 B.T.U.'s.  
Torrid Zone Gas-Fired furnace for manufactured or natural gas  
Convertible gas furnaces for either gas or coal burning  
Equator steel furnaces, for competitive work, from \$56.00 up  
Fans and air conditioning equipment of highest quality

*From the smallest to the largest—and all of heavy steel, hot riveted and cold calked for permanent tightness*

**LENNOX FURNACE COMPANY, INC.**  
Marshalltown, Iowa      Syracuse, N. Y.

Lennox Furnace Co. of Canada Ltd.  
Toronto      Winnipeg

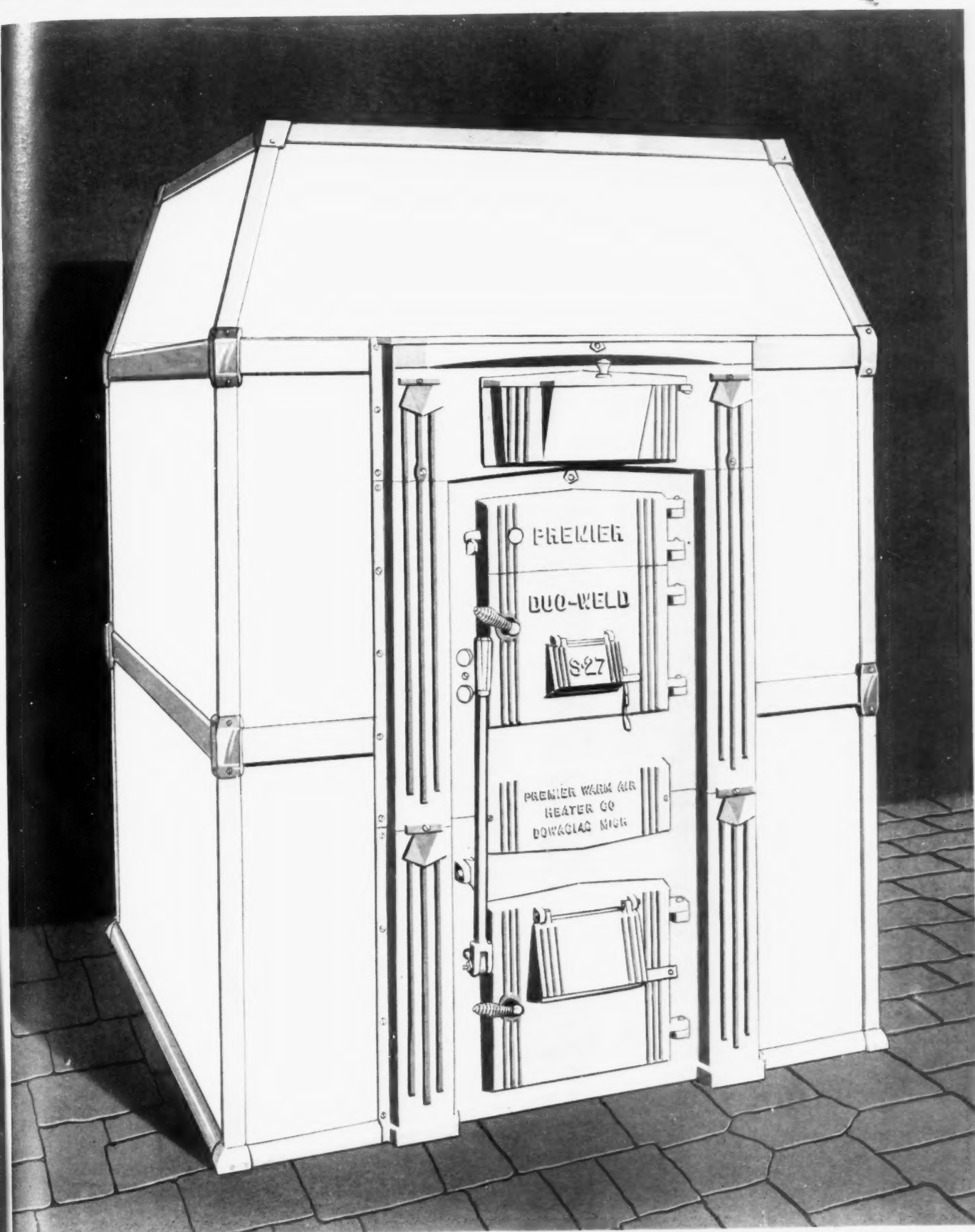
**THE WORLD'S LARGEST MAKERS OF STEEL FURNACES**

*Say you saw it in AMERICAN ARTISAN—Thank you!*



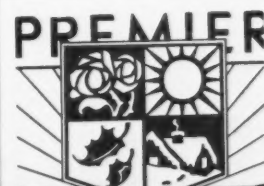




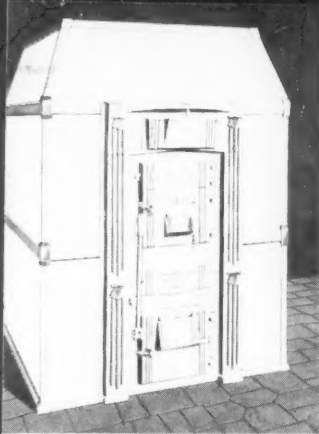


# PREMIER Duo-WELD

*"America's Most Beautiful Furnace"*







AT LEFT: Premier Duo-WELD is shown with the new Premier "Easy-Up" Square Casing. (Patent Applied For.) For complete details of the new Premier Square Casing, write the Premier Warm Air Heater Company, Dowagiac, Michigan.

# Beautiful!

Yes sir! Beauty is the thing these days. You see it everywhere—beautiful radios, beautiful automobiles, even beautiful bathtubs.

And do you know why? Here's the reason. The women-folks! More and more they are having their say-so as to which and what is bought, AND A WOMAN'S WEAKNESS IS BEAUTY!

Take gas stoves, as an example. Show a woman two gas stoves. Which one does she walk up to and ask questions about? You know the answer. The one that looks the best!

And that's what is going to happen in furnaceland this coming year. Premier Dealers are going to set beautiful Premier Duo-WELDS on their sample floors. They are going to call on prospects and show photographs of beautiful Premier Duo-WELDS. The women-folks are going to say: "Well what do you know about that! A really and truly good looking furnace! Tell me about it!"

And when the women-folks ask Premier Dealers to tell them about Duo-WELD, do you think that Premier Dealers are going to be left tongue-tied, with nothing to say except that Duo-WELD is good looking? Not for a minute! Premier Dealers are going to talk half the night about Duo-WELD'S automatic Direct Draft Damper, its easy running

roller bearing duplex grates, its large double feed doors, its large roomy ashpit and deep firepot, its waist high shaker and all the other many Duo-WELD features that appeal so strongly to women-folks.

And when the man of the house raises his voice, you can bank on it that he, too, will be told plenty. He will be told and sold on Duo-WELD'S armor plate construction, its double electrically welded joints that ten thousand horses can't pull apart, its over-size vertical dividing plate radiator, its hot formed head and a host of other he-man features that make Premier Duo-WELD one of the most durable furnaces the world has ever known.

Yes sir, Duo-WELD has guts as well as beauty! Fact of the matter is, Premier Duo-WELD is guaranteed for 10 years against most anything you can think of.

It all comes down to this: WHICH SIDE OF THE FENCE ARE YOU GOING TO BE ON IN 1931? Are you going to be on the other side of the fence and see your competitors walk away with business with Premier Duo-WELDS, or are you going to be on the Premier side of the fence and have something to sell

that your competitors haven't? The decision is up to you, and if you want more information to help you decide, just write us. There is absolutely no obligation. WHY NOT DO IT RIGHT NOW?

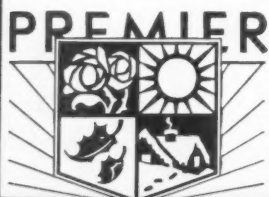
**PREMIER**  
WARM AIR HEATER CO.  
DOWAGIAC, MICHIGAN



PREMIER of DOWAGIAC, Dowagiac, Mich.  
Please send me a copy of the folder showing and telling all about your new Duo-WELD Armor Plate Heater.  
(No obligation.) Mail my copy to:

NAME.....  
ADDRESS.....  
CITY.....STATE.....

While they last, folders completely illustrating and describing the New Premier Duo-WELD Heater will be sent to all dealers who request a copy. Asking for a copy of the folder does not obligate you in the least, neither will you be bothered by a personal call. Write for your copy today—there is no better time than right now!



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TURN OVER A NEW LEAF...

1931

# SELL this most complete line in the Industry. . . .

**S**ELLING heating equipment in 1931 is more than ever going to mean handling a complete, diversified line that includes a heater for every type of installation . . . to meet the individual requirements of every customer. You can't afford to lose sales due to inability to meet specific demands.

MUELLER offers you the most complete line in the industry . . . steel and cast furnaces, jacketed or unjacketed steam and hot water boilers, horizontal tubular furnaces, wood-burning furnaces, gas-fired furnaces and boilers, pipeless furnaces, garbage

burners, tank heaters, registers and fittings . . . a line of high reputation and advanced engineering design, in a price range that will enable you to meet competition on an equal footing.

Three of the leaders in the Mueller line are shown on this page. For full information regarding the complete line, address:

**L. J. MUELLER FURNACE COMPANY**

336 So. 2nd Street

Milwaukee, Wis.

Branches: St. Louis, Detroit, Chicago, Minneapolis, Seattle, Salt Lake City, Baltimore, Los Angeles, Memphis

# MUELLER

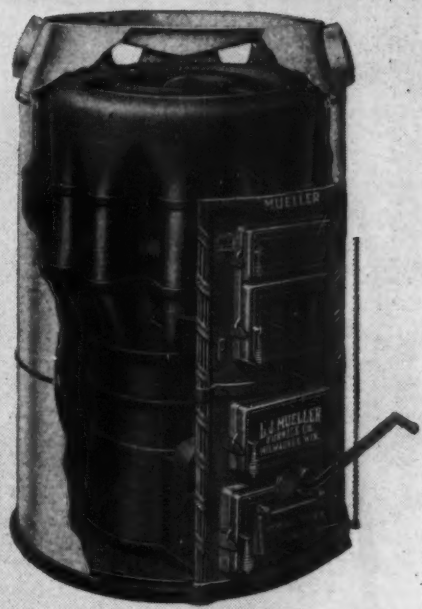
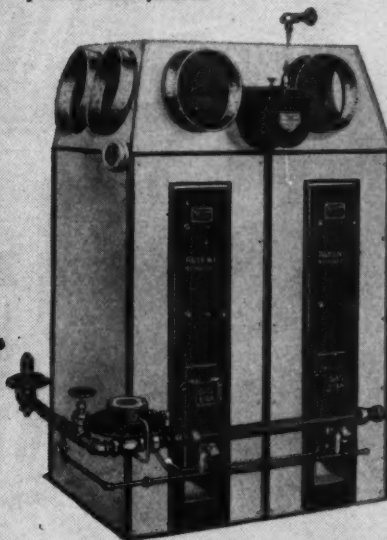


**Mueller Full Front Furnace**

A low-priced, high quality, return flue type furnace. The "Builders' Choice"—popular with all classes of trade.

**Mueller Gas-Era Gas-Fired Cast Furnace**

Cash in on the rapidly growing market for gas heat. Sell this most modern of all heating plants. Fully automatic. Serpentine type cast heating sections. Multiple unit design. Operates with any kind of gas. If you are located in a natural gas territory, ask about the new, low-priced Mueller Gas-Era pressed steel furnace.



**Mueller Double Radiator Furnace**

The aristocrat of Mueller coal-fired furnaces. Your best bet for replacement jobs and better-class new installations. Has practically twice as much heating surface as the ordinary furnace of equal grate area.

# FURNACES

Mention AMERICAN ARTISAN in your reply—Thank you!

# TAKE *the* XX<sup>th</sup> CENTURY

for  
**1931**  
PROFITS

—the fastest moving, most complete line of furnaces and heating units on the market.

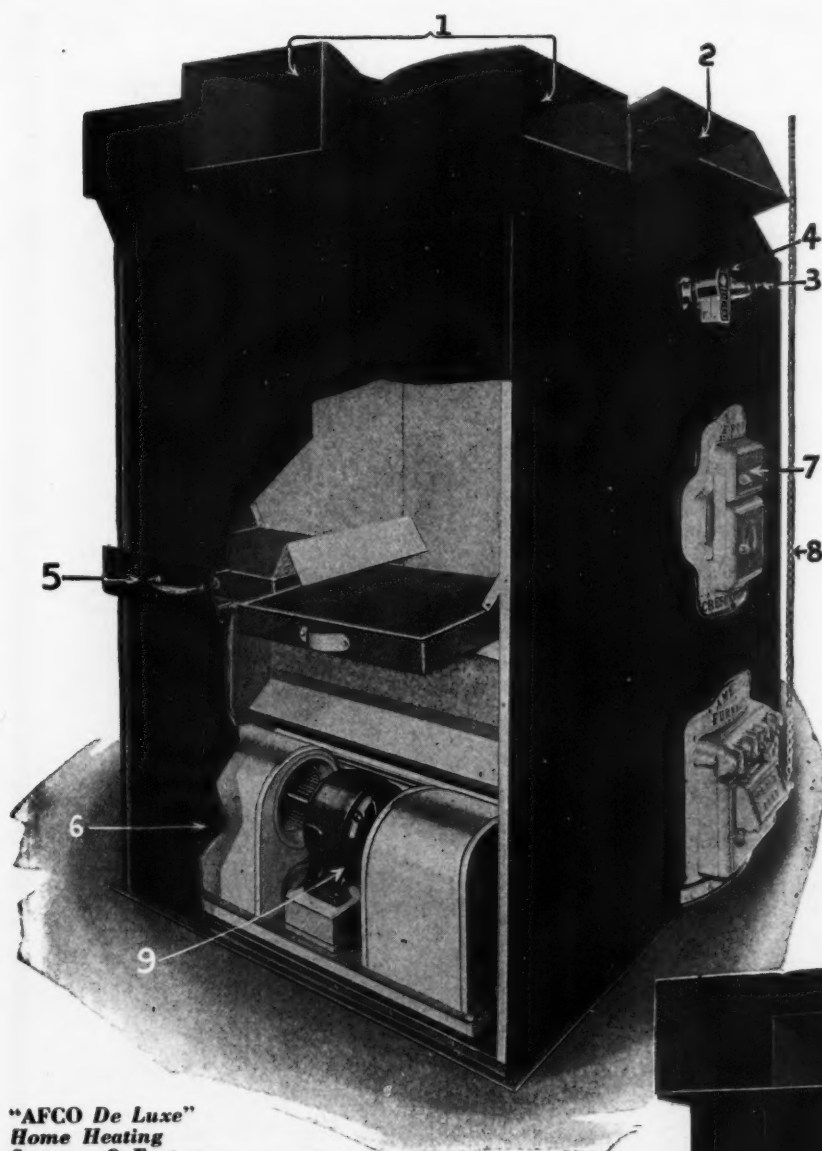


**XX<sup>th</sup>**  
Hot Blast Cast Furnaces  
Hot Blast Steel Furnaces  
Hard Coal and Coke Furnaces  
Pipeless, Single Portage Furnaces  
Popular Priced Portage Gas Burners  
Gas Furnaces and Auxiliary Systems  
Public Building Horizontal Systems  
Room Heaters for Schools, Stores  
Boilers of all types, sizes  
Regulators and Registers  
Fans and Humidifiers.  
**CENTURY**

Write for our 1931 Dealer Proposition

*The* XX<sup>th</sup> **CENTURY H. and V. CO. AKRON, O.**

Mention AMERICAN ARTISAN in your reply—Thank you!



"AFCO De Luxe"  
Home Heating  
System—9 Features

TWO  
"AFCO"  
Super-Heaters  
That Will  
Make History  
in 1931



"AFCO Duo-Blo"  
Unit Heater

## Two Great Markets

The new "AFCO De Luxe" Healthful, Winter Heating and Summer Cooling, System for the home and the new "AFCO Duo-Blo" Unit, a Winter Heater and Summer Cooler for commercial, industrial and similar large buildings, open two new great markets for the warm-air type of system.

1931 standards demand something better than the old conventional type of heater and the dealers who are in position to supply it, will reap the profits. Can you afford to stand aside and let others forge ahead?

Don't delay—get the full facts about these two new and highly popular profit makers.

*Write Today*

**AMERICAN FURNACE CO.**

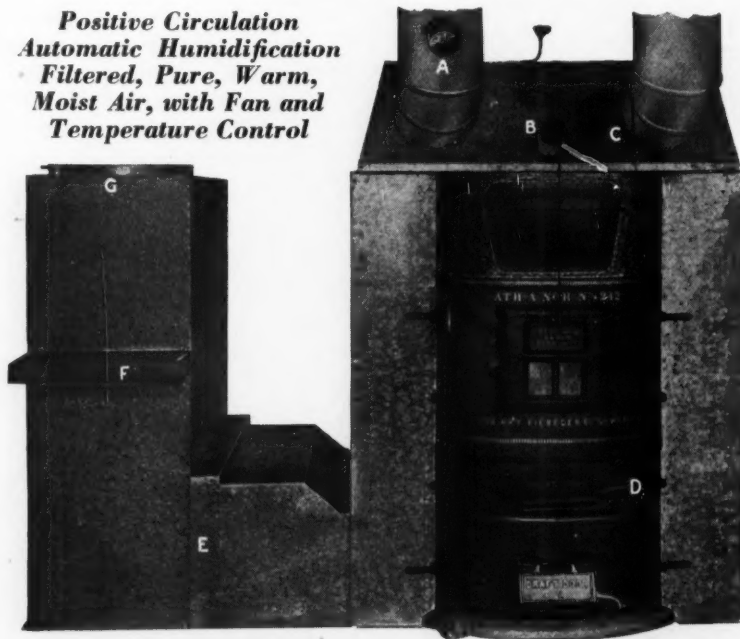
2719-31 Morgan Street  
St. Louis, Mo.

Mention AMERICAN ARTISAN in your reply—Thank you!



***Both the New  
Akron Air Blast  
and the Original  
Athanor Furnace  
Are Built  
into this  
Automatically-  
Controlled  
Air Conditioning  
Unit***

***Positive Circulation  
Automatic Humidification  
Filtered, Pure, Warm,  
Moist Air, with Fan and  
Temperature Control***



## **The May-Fiebeger Company** **NEWARK, OHIO**

*Manufacturers of Quality Furnaces for Half a Century*



***My! What a Line!***



***New  
Akron Air Blast  
—A Giant of  
Heating Power***



***The Athanor  
All Cast Iron  
Smokeless Furnace  
—The Best in  
Its Class***

***Write today for details***

*Mention AMERICAN ARTISAN in your reply—Thank you!*

## “Old Wine in New Bottles”



*We Uncork Another Big Improvement!*

### The “Quick Action” Furnace Casing

(Patent Applied For)

**Simple—Substantial—Efficient**  
**No Dead Corners or “Air Pockets”**

Positive Insulation—No Heat Loss in Basement.  
Speeds Up Circulation of Warm Air and Over-comes Sluggishness.

Easy to Erect—Occupies Less Space.

Shipped “Knocked Down”—Easy to Store.

Can Be Installed in Basement Only 6 Ft. Deep.

Slope of Canopy Provides Good Elevation of Pipes.

Can Be Attractively Painted “on the Job.”

Reasonable in Cost and Will Save Fuel.

Baffle Plates and Return Trips to the Job.

This Is the Logical Way to Case Steel Furnaces.

We Also Supply the Regular Round Casing but Recommend the Square Casing as a Solution of Well Known Heating Problems.

**BE PROGRESSIVE! HANDLE A PROGRESSIVE LINE**

## LONDON BOILER PLATE FURNACES

*Are Cold Riveted and Expertly  
Welded. Smoke, Gas and  
Fume Tight*

Are Equipped with Either Duplex Basket  
Dump, Triangular or Draw-Center

### GRATES and RADIATORS

FOR  
SOFT OR HARD COAL, COKE OR OIL

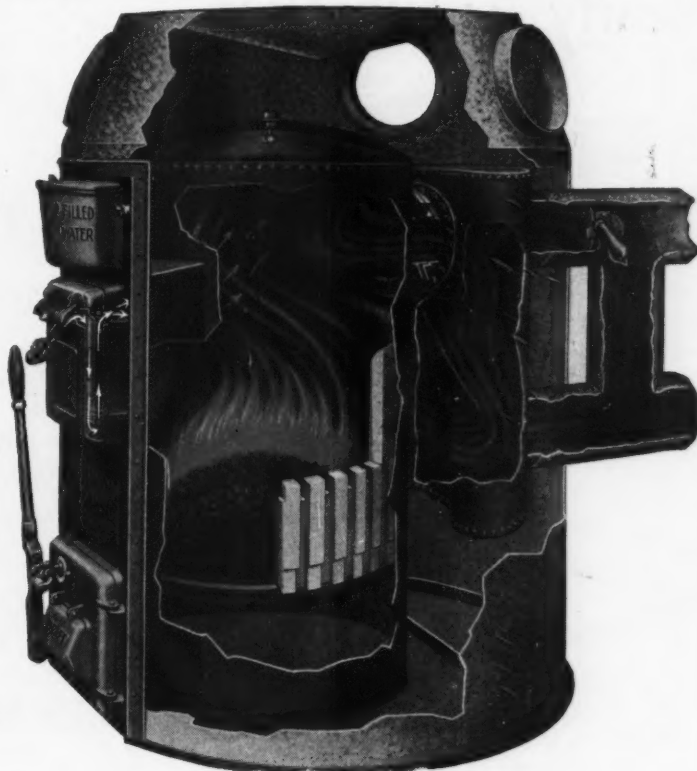
*With Balanced Heating Surfaces*

A Good Proposition for Live Dealers

WE SELL THE LEGITIMATE FURNACE  
TRADE ONLY

**The LONDON FURNACE CO.**  
LONDON, OHIO

THOS. W. PEARSON—Sales Manager



*They Cost No More Than the Troublesome Kind.  
Prompt Shipment Guaranteed.*

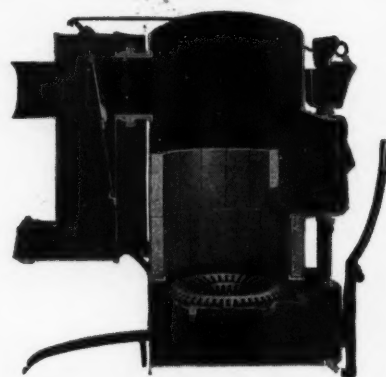
*Say you saw it in AMERICAN ARTISAN—Thank you!*

# OF COURSE YOU'RE RIGHT



A  
CUSTOMER WOULDN'T BUY A  
CAR LIKE THIS!

Yet Many Dealers Are Presenting  
Their Prospects With Furnaces  
Nearly As Obsolete . . . .



*The Steel Furnace Which Bears  
the Stamp of Approval of Manu-  
facturer, Dealer and Consumer.  
A Complete Line—7 Sizes.*

DOWAGIAC  
SEAMLESS STEEL FURNACES  
Are Up-to-Date, Modern,  
with More New Exclusive Features

"THE STANDARD OF COMPARISON"

*Show Your Prospects Up-to-  
Date Modern Heating Units—  
Write for Detailed Information*

DOWAGIAC STEEL FURNACE CO.  
DOWAGIAC, MICHIGAN

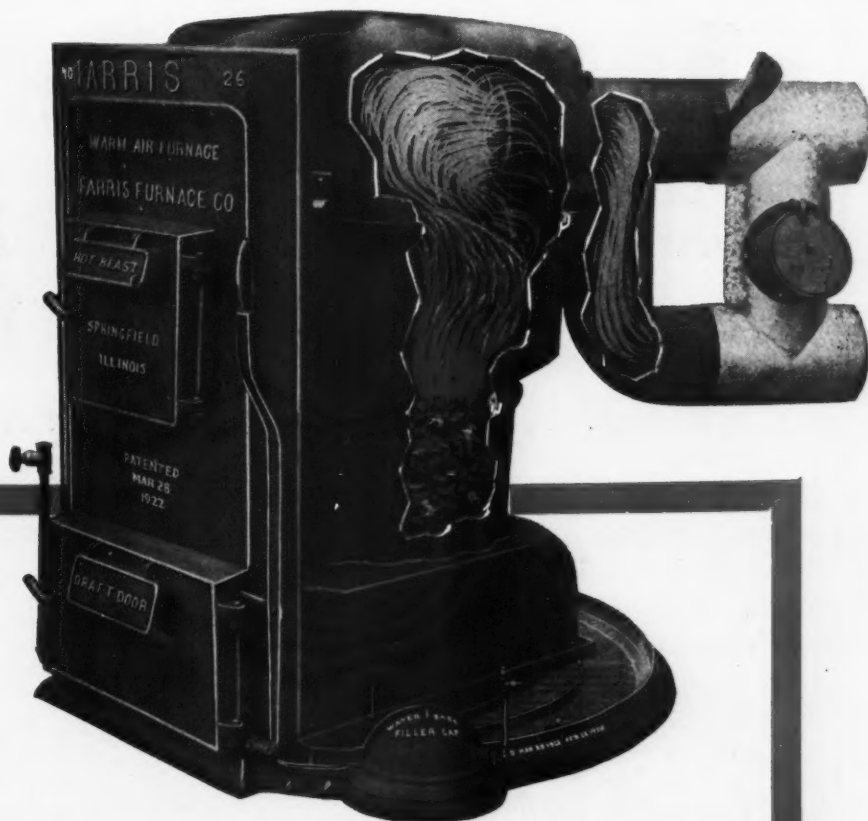


# Real Air Conditioning and 35% to 55% Relative Humidity Guaranteed with the

## FARRIS WATERBASE FURNACE

*The only furnace  
in which a fan  
installation  
cannot stir up  
dust.*

*The Waterbase  
principle has been  
thoroughly tested  
in use—in thou-  
sands of homes.*



WITH the FARRIS Waterbase Furnace you sell your customer a real air conditioning unit, without adding any accessory. The Waterbase is an exclusive patented Farris feature. There are no pans to fill as the automatic valve keeps the water at the proper level in the waterbase.

The public is fast becoming aware of the need for humidity in the home, supplied adequately and economically only in a warm air system. The Waterbase

feature of the Farris will therefore appeal to **your** customers.

The Farris is a high quality furnace in every respect. For many years the self-cleaning construction has been one of its appealing features. The feed section and ash pit extend through the front. Doors are ground air-tight; joints are positively leak proof.

When you sell the Farris Waterbase Furnace you are selling a truly distinctive heating and air conditioning unit.



*Send this coupon today*

FARRIS FURNACE CO.  
Springfield, Illinois.

Gentlemen:

Send me your dealer proposition and full information on the Farris Waterbase Furnace.

Name.....

Address.....

A.A.

**FARRIS FURNACE COMPANY**  
Springfield, Ill.      Established 1899

Say you saw it in *AMERICAN ARTISAN*—Thank you!

Here's the *Big News* for 1931

# RYBOLT

*announces an Improved Furnace with*

## ONE PIECE RADIATOR

SMOKE AND CLEANOUT COLLARS CAST ON

Year after year Rybolt Dealers have enjoyed satisfying sales and profits in the sale of Reliable Rybolt Furnaces. Now—for 1931—the Rybolt offers important advantages:

- 1—A well-known name—that identifies dependable heating systems.
- 2—A high-quality, improved furnace, now equipped with a heavy, one-piece radiator.
- 3—A price that enables you to meet all competition.

The New Rybolt One-Piece Radiator, with smoke and cleanout collars cast on, is a single seamless casting. That an improvement of such importance can be included in a furnace in the price range of the Rybolt is revolutionary. Only quantity production and other Rybolt manufacturing advantages make this possible.

*Write or wire for details of our interesting proposition*

THE RYBOLT HEATER COMPANY  
Ashland, Ohio  
Cincinnati Indianapolis



# RYBOLT FURNACES ■ ■

*Say you saw it in AMERICAN ARTISAN—Thank you!*



THE COVERED-WAGON  
WAS MODERN  
TRANSPORTATION  
IN-1855 —

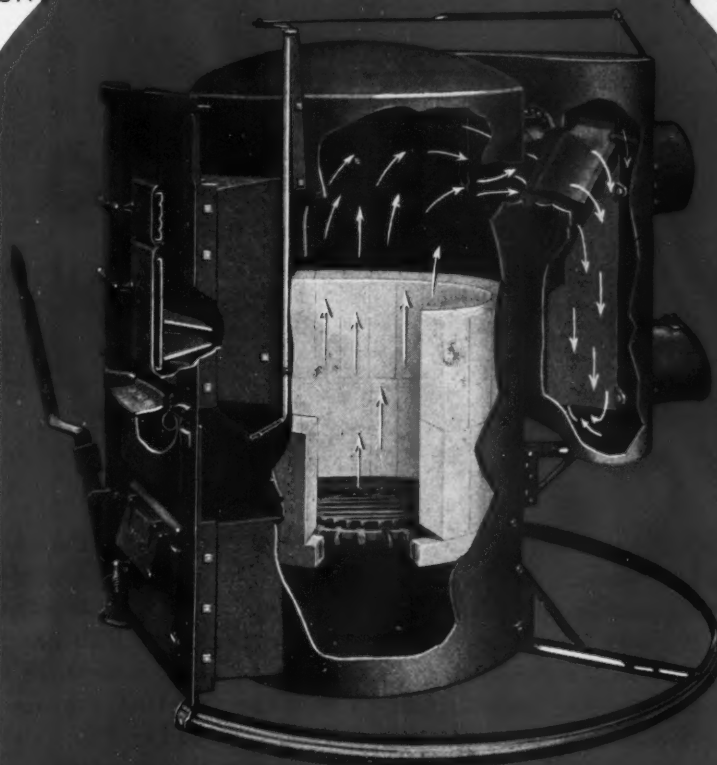


TODAY METHODS  
OF LOCOMOTION  
OF 75 YEARS OR..  
EVEN 10 YEARS  
AGO ARE OBVIOUSLY  
OUT OF DATE ....

*Warm Air Heating of fifty years ago was based on little knowledge and a lot of guess-work—*

*Today you use the Standard Code and Heat Regulators, Automatic Humidifiers, Blowers and Filters, and you SHOULD use a MODERN DOUBLE ARC WELDED FURNACE.*

### THE PURE-AIR STEEL WARM AIR FURNACE



The MODERN Furnace  
DOUBLE ARC WELDED

*Inside and Outside*

*Modern airplanes and automobiles are WELDED, not riveted.*

*Our factory is completely equipped to rivet power boilers and tanks as well as furnaces but we have followed the progress of WELDING and use it because it has PROVED to be BETTER*

**W**E know that other warm air furnaces are riveted as well as welded and also that in the past some furnaces have been constructed using welding alone. We know that **SOME** methods of welding have failed in the past because the intense heat generated in the furnace forced the heads off the furnaces. **Double Arc Welding**, inside and outside as used in constructing Pure-Air Welded Steel Warm Air Furnaces and in **high pressure steam boilers** is a distinctly different process recently perfected. The art and science of welding has greatly developed in the past few years. That's why gradually our vast riveting facilities are being scrapped. Heads of Pure-Air Welded Steel Furnaces will **NOT** come loose because the welds are stronger and will stand more heat than the body itself. Only expert welders work on Pure-Air Steel Furnaces—they must be experts to weld our pressure vessels which must pass both our tests and official inspections to insure safety.

*Send for the free Booklet today which tells all about Double Arc Welding and Pure-Air Welded Steel Warm Air Furnaces.*

**ENTERPRISE BOILER & TANK WORKS**

1955 North Long Avenue

-:-

Chicago, Illinois



**SEND FOR THIS  
BOOKLET TODAY**

Enterprise Boiler & Tank  
Works, 1955 N. Long Ave.,  
Chicago, Ill.

Gentlemen:

Send us your free booklet  
on Welding Vs. Riveting as  
advertised in **AMERICAN  
ARTISAN.**

Name.....

Street Address.....

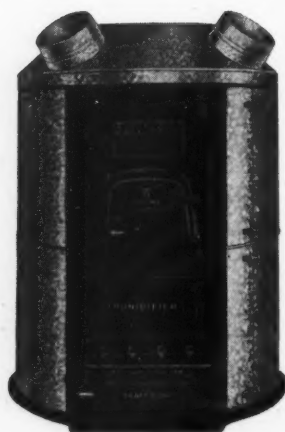
Town.....

State.....

*Say you saw it in AMERICAN ARTISAN—Thank you!*



# More Business Ahead



for Faultless  
Furnace  
Jobbers and  
Dealers

All ratings certified by National  
Warm Air Heating Association

The new and strikingly modern "black and red front" Series "C" Faultless Furnace presents for dealers and jobbers handling this famous line great possibilities for increased business. The many outstanding superiorities in features of construction, performance and appearance, are now enhanced by the new color effects which are in line with the present vogue for adding a cheerful and colorful aspect to otherwise drab basements—this is an unusual talking point! Add to this the fact that the new red and black Faultless Furnace fronts are absolutely heat resistant, retaining their vivid coloring and finish for the long life of the furnace. Face the future with optimism . . . get your share of the business that lies ahead for Faultless dealers and jobbers. Write today for descriptive outline of the Faultless Furnace Sales Plan for 1931!

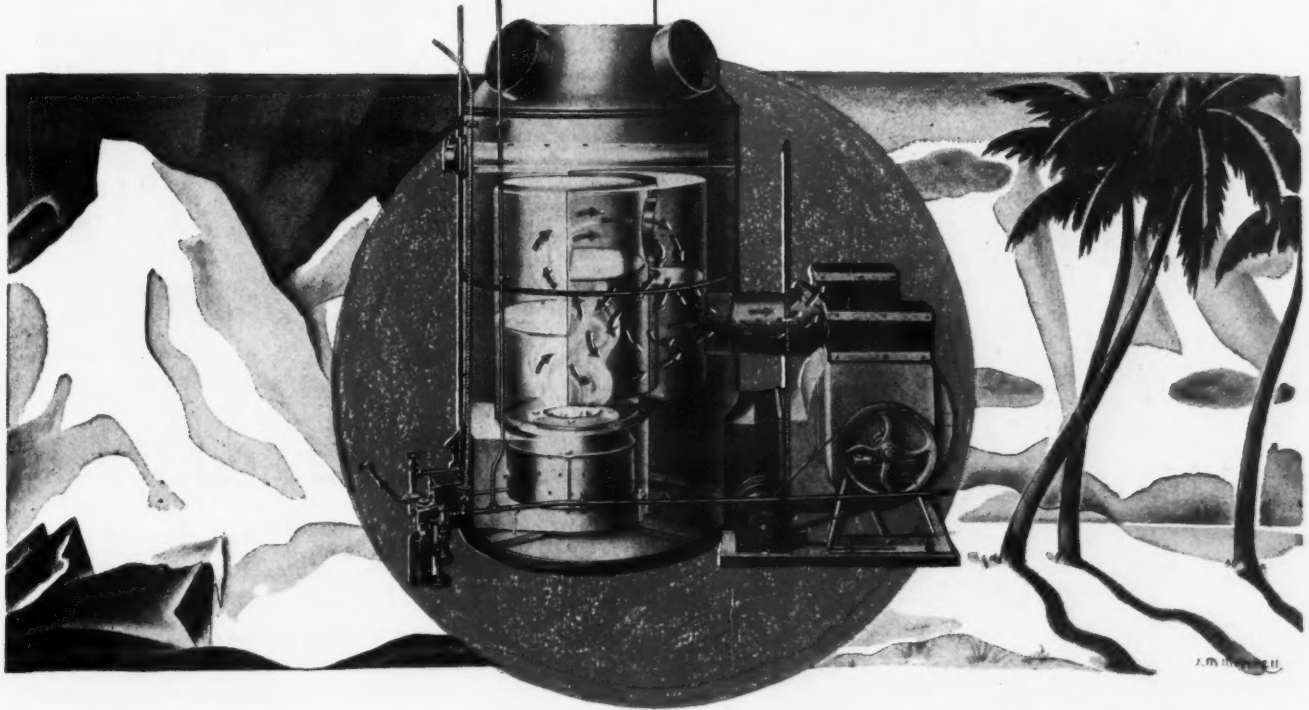


**The Graff Furnace Company**  
Executive and Plant Offices: Scranton, Pa.

Metropolitan Sales Offices: 116-118 Wooster St., New York City

*Say you saw it in AMERICAN ARTISAN—Thank you!*

# "Weather Control" All in One Unit



A WARM-AIR FURNACE · A HUMIDIFIER · A THERMOSTAT  
AN AUTOMATIC OIL-BURNER · AN AIR-CIRCULATOR

## ALL for the price of a good oil-burner alone

Is it not guesswork to hook up an oil-burner to a furnace that wasn't made for it?

It's old-fashioned practice to sell just heat. The modern way is to sell "Weather-Control", Winter and Summer, Spring and Fall, all combined; scientifically constructed; made to work as a complete unit.

The Piatt oil-burning furnace gives you all this—gives you more. For this complete unit is a warm air furnace, a humidifier, a thermostat, an automatic oil-burner, an air-circulator, all these combined in one unit—all for the price of a good oil-burner alone.

Here's one of the greatest opportunities to sell ever presented. You just install the plant and then leave it to the purchaser to circulate warm, humidified air in Winter or cool basement air in Summer. No wonder dealers who are joining this rapidly growing sales organization are reaping big sales and profits.

Remember this principle has been tested and proved for years. It is backed by the Motor Wheel Corporation and all its resources, producing ability and engineering skill. The coupon below will bring you complete details of this worthwhile opportunity.

MOTOR WHEEL CORPORATION, Heater Division, LANSING, MICHIGAN

**PIATT**  
DOMESTIC UTILITIES

Motor Wheel Corp., Dept. 254, Heater Division, LANSING, MICH.

Send me at once, full information and profit-building plan on the Piatt Heater. I am not obligating myself but will study the details carefully.

Name.....  
(Please print or typewrite)

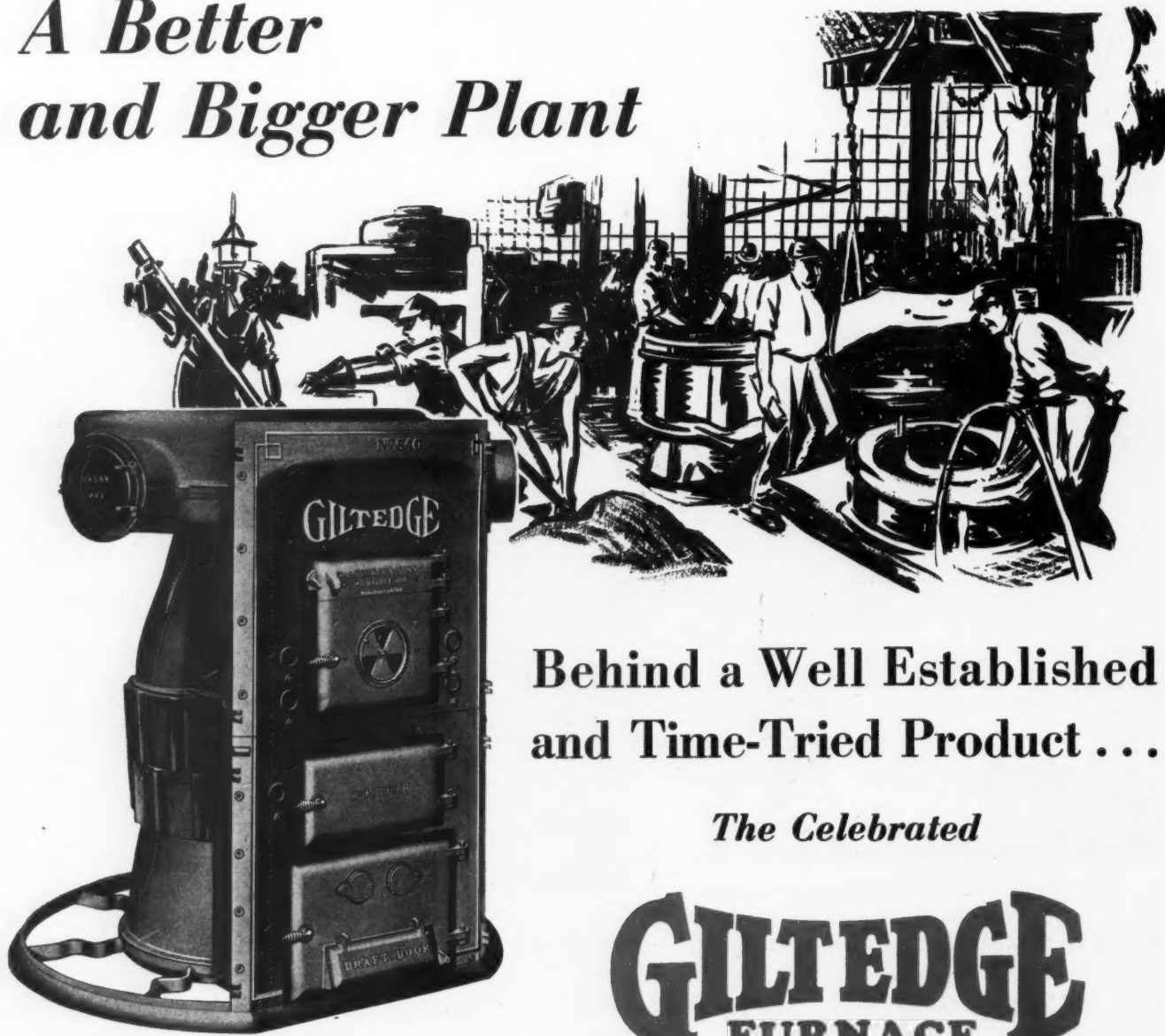
Street.....

City..... State.....

My Business.....

Say you saw it in AMERICAN ARTISAN—Thank you!

# A Better and Bigger Plant



Behind a Well Established  
and Time-Tried Product . . .

*The Celebrated*

## GILTEDGE FURNACE

**T**HE Gilt Edge Furnace has always been a money maker for furnace dealers. The high quality and efficient design of the product coupled with a plan of engineering service and dealer cooperation have been big factors in helping dealers to sell Gilt Edge Furnaces effectively and profitably.

Fifty-five years ago R. J. Schwab, the founder of this business, started making cast iron furnaces and sold them under the trade name "Gilt Edge" to signify the high quality he built into them. This business has steadily grown and prospered on the basis of its service.

This year, under its new corporate name, the company purchased the site and plant, covering about four acres, formerly occupied by a stove works at Cedar Grove, Wisconsin, near Milwaukee. A splendid, new, fire-proof foundry was added and the plant thoroughly modernized.

The ideals of this company will be to make its products of such high quality that they will deserve to bear the old trade name "Gilt Edge" and to continue the program of unexcelled service to furnace installers which has been uninterrupted for fifty-five years.

*Write today for catalog and agency details*

### SCHWAB FURNACE & MFG. CO.

283 Clinton Street

Cedar Grove, Wisconsin

*Say you saw it in AMERICAN ARTISAN—Thank you!*



# 2 MIGHTY GOOD REASONS

## Why MIDLAND DEALERS ARE MAKING MONEY

### EL CAPITAN

El Capitan has risen to its rightful place among America's leading quality steel furnaces because it has met every requirement of both dealer and home owner. Its trim appearance, sturdy construction and "built-in" quality furnishes the dealer with a furnace he can sell even to customers who insist upon making a feature by feature comparison of many makes before buying.

El Capitan is a massive gas-tight warm air heater constructed of heavy boiler plate steel with all seams riveted for strength and calked to further insure permanent tightness.



### EL DORADO

Made in the same plant by the same workmen and with the same tools, the El Dorado steel furnace provides the dealer with an up-to-date riveted steel furnace with which he can outsell competition in low-price fields. Where high quality is essential but low price is a major consideration in closing furnace sales, El Dorado is helping many dealers to the lion's share of business in his community.

We have some interesting facts concerning these two furnaces, which we will gladly send upon request.

*"Yours for  
Cleaner Heat"*

WRITE FOR  
COMPLETE  
INFORMATION

**-MIDLAND FURNACE COMPANY-**  
• COLUMBUS, OHIO, U.S.A. •

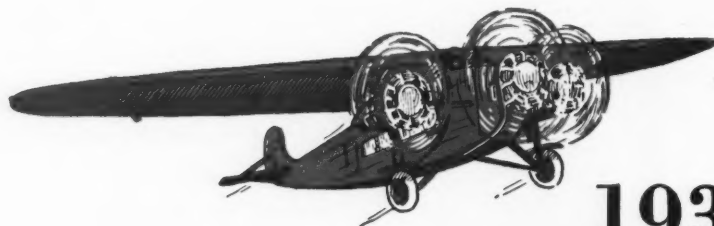
Mention AMERICAN ARTISAN in your reply—Thank you!

# HALL-NEAL VICTOR

*The* **FURNACE** *with*

**FINS**

*The modern method of heating*



**NEW!**

**1931 MODEL**



*The new Hall-Neal Victor is equipped with a flat grate and waist high shaker handle. An automatic draft control operates when feed door is opened and prevents smoke from escaping into basement. Many other features.*

**T**HINK what it means to be able to offer your prospects a successful, proven proposition unlike that presented by all of your competitors!

The Hall-Neal Victor franchise puts you in a class by yourself.

Advantages afforded by the sale of this distinctly different furnace will increase your immediate profits and build future business.

Although a Pioneer builder of boiler-plate, steel furnaces (the first Hall-Neal was made over 40 years ago) this Company has further demonstrated its leadership by this outstanding improvement—*The Furnace with Fins.*

Let us send you the details of this unusual product and proposition.

*Write or wire today*

**HALL-NEAL FURNACE  
COMPANY**

1322-32 North Capitol, Indianapolis, Ind.

# Two Ways to Make More Money During 1931—



Only furnace made by new Electromelt casting process. Ask about it.

# 1

## BRILLION FURNACES

**HIGH QUALITY — LOW PRICE — QUICK DELIVERY**

You can get more profit out of quality warm air furnace installations by putting most of your customer's money into the kind of a heating system he needs—put it into service *on which you get all the profit*. A Brillion Furnace properly installed will give lasting service—as long as any high priced furnace on the market.

Unless you are a Brillion dealer it will

be difficult to believe that a furnace of the extraordinary quality of the Brillion could sell at such a low price.

You will have no trouble selling your customers quality installations and at an attractive price, too, when you feature the Brillion. The quality features of the Brillion will be apparent to prospects who see it on your sales floor.

## BRILLION Portable Vacuum FURNACE CLEANER

*—a Year 'Round Business Getter and Money Maker*



You can derive a handsome profit on vacuum cleaning service with a Brillion Portable Vacuum Cleaner, if you go out after this class of work. Many a furnace in the locality which you serve is rendering unsatisfactory service merely because it needs cleaning. You can get these jobs merely for the asking, render the home owner a real service and at the same time run into a lot of profitable repair and replacement business. Now is a fine time to go after these jobs, as neglected furnaces are showing up their faults in service. With a Brillion Portable Vacuum Cleaner you can clean furnaces in the winter as well as when they are not in use.

Send for our booklet "Furnace Cleaning Made Easy and Profitable," which shows you how to conduct a profitable cleaning service and how to get cleaning jobs through advertising, personal solicitation, phone calls, through coal dealers, etc. It shows you the newspaper advertising series which is available to dealers.

# 2

**Mail this coupon! You will not regret it!**

**BRILLION FURNACE CO., Brillion, Wisconsin**

Please send me complete details and your Furnace Catalog No. 80 ☐.  
Send me your booklet "Furnace Cleaning Made Easy and Profitable" ☐.

Name.....

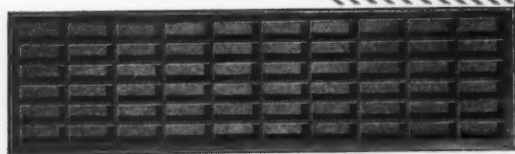
Address.....

Town..... State.....

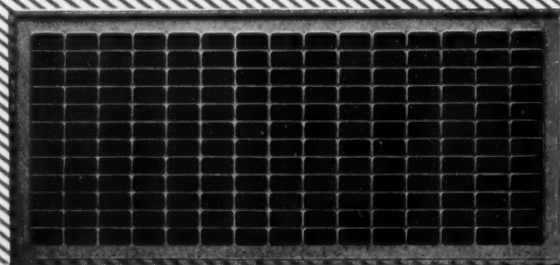
Mention AMERICAN ARTISAN in your reply—Thank you!



# The STANDARD OF COMPARISON SUPER-REGS

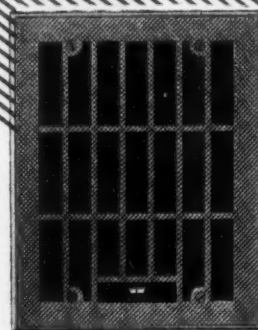


Style "C"—Cobble Cold Air Grille



Above:  
Style "M"—Cold Air Grille

**N**O need to ask, "Why install Super-Regs?" It's a simple matter of good business . . . of accepting the best as such, because its been best for 85 years. Architects, engineers and builders specify, "Registers and Grilles to be Tuttle & Bailey make, or equal." That's the reason why you should install Super-Regs . . . they're the standard! And this unanimous choice is not the result of a blindfold test. It is based on comparisons . . . in craftsmanship, in quality, in performance. Tuttle & Bailey equipment just has to be best to come out on top.

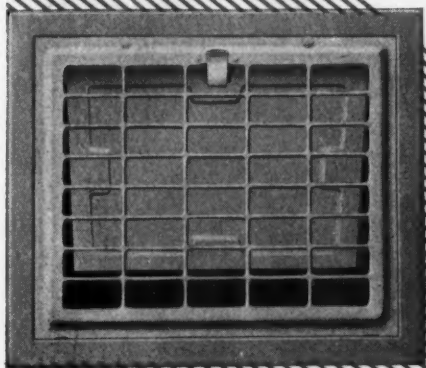


Style 80—  
Cobble Register

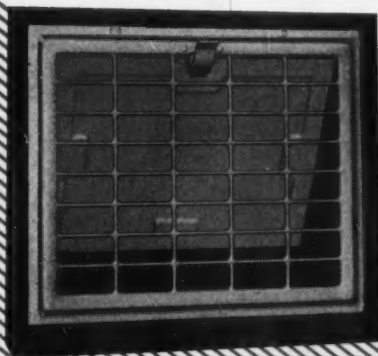
The registers and grilles shown on these pages are the types that have won the industry's approval. They are the kind your customers expect . . . the kind you can guarantee without doubt, because we guarantee them. They're your protection against inferior installations . . . your introduction to more furnace business.

Large stocks of standard sizes carried in our conveniently located warehouses and by leading jobbers.

Order direct, or from your nearest jobber.



Style 302  
Water Register



Style 902—  
Baseboard  
Register

# TUTTLE & BAILEY

## MANUFACTURING COMPANY

*Established 1846*

441 Lexington Avenue  
New York, N. Y.

Chicago, Ill.  
Los Angeles, Cal.

Boston, Mass.  
Kansas City, Mo.



**THE HANDY** Furnace Pipe and Fittings

**BUILT TO OUTLAST THE BUILDINGS IT GOES INTO . .**

*~ and to snap together so rapidly that your fitting and labor costs are kept at a minimum . .*

THE HANDY PIPE PEOPLE ARE A MIGHTY FINE BUNCH TO TIE TO

THE  
**HANDY**  
FRICTIONLESS  
FURNACE PIPE  
PAT. JULY 20, 1923  
MFGD. BY  
**F. MEYER & BRO. CO.**  
PEORIA ILL.

INNER PIPE OUTER PIPE

**F. MEYER & BRO. CO.**  
PEORIA . . ILLINOIS

Mention AMERICAN ARTISAN in your reply—Thank you!



**GET****YOUR COPY OF  
THIS NEW  
BOOK****HEAT YOUR HOME  
WITH HEALTHFUL  
WARM AIR****FROM A  
NIAGARA  
FURNACE****SEND  
THE  
COUPON  
FOR YOUR  
COPY TODAY****SELL** Warm Air Heating in 1931. Here's the book that shows how to do it at a profit.

This new 1931 Niagara Warm Air Furnace Book is as modern as the New Niagara Furnace which it describes. It is a complete, logical and convincing presentation of the Niagara story. It shows how to speed up installation, give the user permanent satisfaction, and make more money. Full of practical information for every dealer who intends to take advantage of the growing popularity of good warm air heating.

*Send the coupon for your copy today*

*The Niagara Warm Air Furnace is a full-value-in-every-part product. It conforms in every respect with the requirements of the Standard Code.*

**The Forest City-Walworth Run Foundries Co.**  
2500 West 27th Street, Cleveland, Ohio

**NIAGARA  
WARM AIR FURNACE**

FOREST CITY-WALWORTH RUN FOUNDRIES CO.  
2500 West 27th Street, Cleveland, Ohio

Send your 1931 Niagara Warm Air Furnace Book

Say you saw it in *AMERICAN ARTISAN*—Thank you!

**HANDY** Furnace Pipe  
and Fittings

**BUILT TO  
OUTLAST THE  
BUILDINGS IT  
GOES INTO...**

*~ and to snap to-  
gether so rapidly  
that your fitting  
and labor costs  
are kept at a min-  
imum...*

THE HANDY PIPE PEOPLE  
ARE A MIGHTY FINE  
BUNCH TO TIE TO

THE  
**HANDY**  
FRICTIONLESS  
FURNACE PIPE  
PAT. JULY 20, 1921  
MFGD. BY  
**F. MEYER & BRO. CO.**  
PEORIA ILL.

INNER  
PIPE  
OUTER  
PIPE

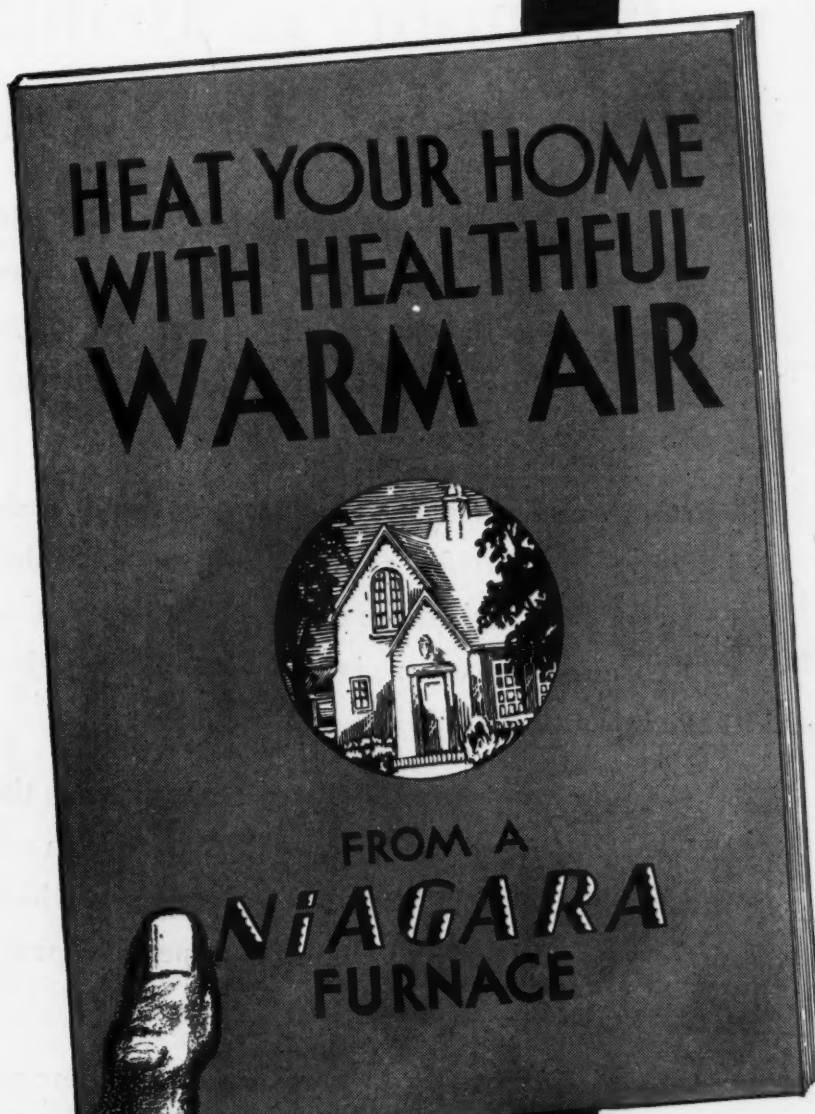
**F. MEYER & BRO. CO.**  
PEORIA ILLINOIS

Mention AMERICAN ARTISAN in your reply—Thank you!



# GET

## YOUR COPY OF THIS NEW BOOK



**S**ELL Warm Air Heating in 1931. Here's the book that shows how to do it at a profit.

This new 1931 Niagara Warm Air Furnace Book is as modern as the New Niagara Furnace which it describes. It is a complete, logical and convincing presentation of the Niagara story. It shows how to speed up installation, give the user permanent satisfaction, and make more money. Full of practical information for every dealer who intends to take advantage of the growing popularity of good warm air heating.

Send the coupon for your copy today



*The Niagara Warm Air Furnace is a full-value-in-every-part product. It conforms in every respect with the requirements of the Standard Code.*

The Forest City-Walworth Run Foundries Co.  
2500 West 27th Street, Cleveland, Ohio

## NIAGARA WARM AIR FURNACE

FOREST CITY-WALWORTH RUN FOUNDRIES CO.  
2500 West 27th Street, Cleveland, Ohio

Send your 1931 Niagara Warm Air Furnace Book

SEND  
THE  
COUPON  
FOR YOUR  
COPY TODAY

Say you saw it in AMERICAN ARTISAN—Thank you!



## No Economy in Using Anything but the Best

**T**HERE is certainly no need to shop around for wood registers when the best registers you can buy cost no more than any other. Why not buy them from a manufacturer who specializes in the production of high quality wood registers?

American Wood Registers have maintained their leadership for twenty-five years. Their quality is due to the use of only high grade lumber for this purpose and the employment of special machinery and highly skilled labor.

This efficient organization, devoted exclusively to the manufacture of wood registers, enables us to turn out a product of distinctly high quality at prices which compare favorably with those of competitive products.

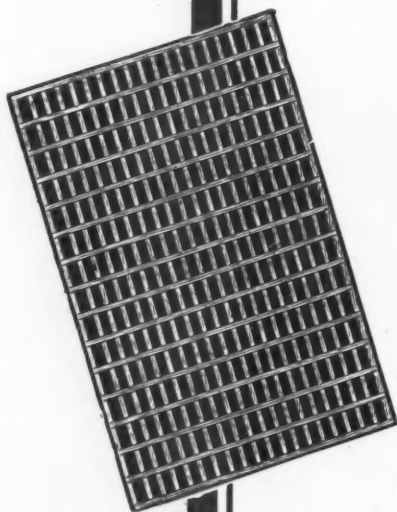
American Wood Registers are made with extreme accuracy—every register passes a rigid inspection before leaving the factory. They are strong and rigid.

*Write for catalog and  
prices*



**American Wood Register Co.**  
Plymouth, Ind.

*Mention AMERICAN ARTISAN in your reply—Thank you!*



WAMPUM  
BRAND



FURNACE  
CEMENT

## You Can Safely Recommend Oil Heat in a Cast Furnace

**Y**OU can safely recommend oil heat in cast furnaces but as a precaution against gas leakage they should be reset with Lastik at the time the furnace is installed.

The growing use of oil burners in warm air furnaces has emphasized the need for gas-tight joints. Experience has proved that a cast iron furnace of proper size, carefully set with *Lastik Wampum Brand Furnace Cement* will give a long term of efficient service with oil heat.

It meets all the requirements of a truly superior furnace cement.

It is odorless, soft, pliable, smooth and easy to pack. It becomes hard under heat but will not crack. It is a non-porous, firmly knit and acid-proof. It does not shrink or swell. A furnace properly set with Lastik withstands the extremes of expansion and contraction to which it may be subjected and gives years of gas-tight service.

Cement one furnace with *Wampum Brand Lastik Furnace Cement* now and let it prove itself. Your jobber will supply you.

*Send the Coupon Today*



### LASTIK PRODUCTS CORPORATION

Oliver Building, Pittsburgh, Pa.

I am interested in Lastik Wampum Brand Furnace Cement. Send me full details.

Name.....

Address.....

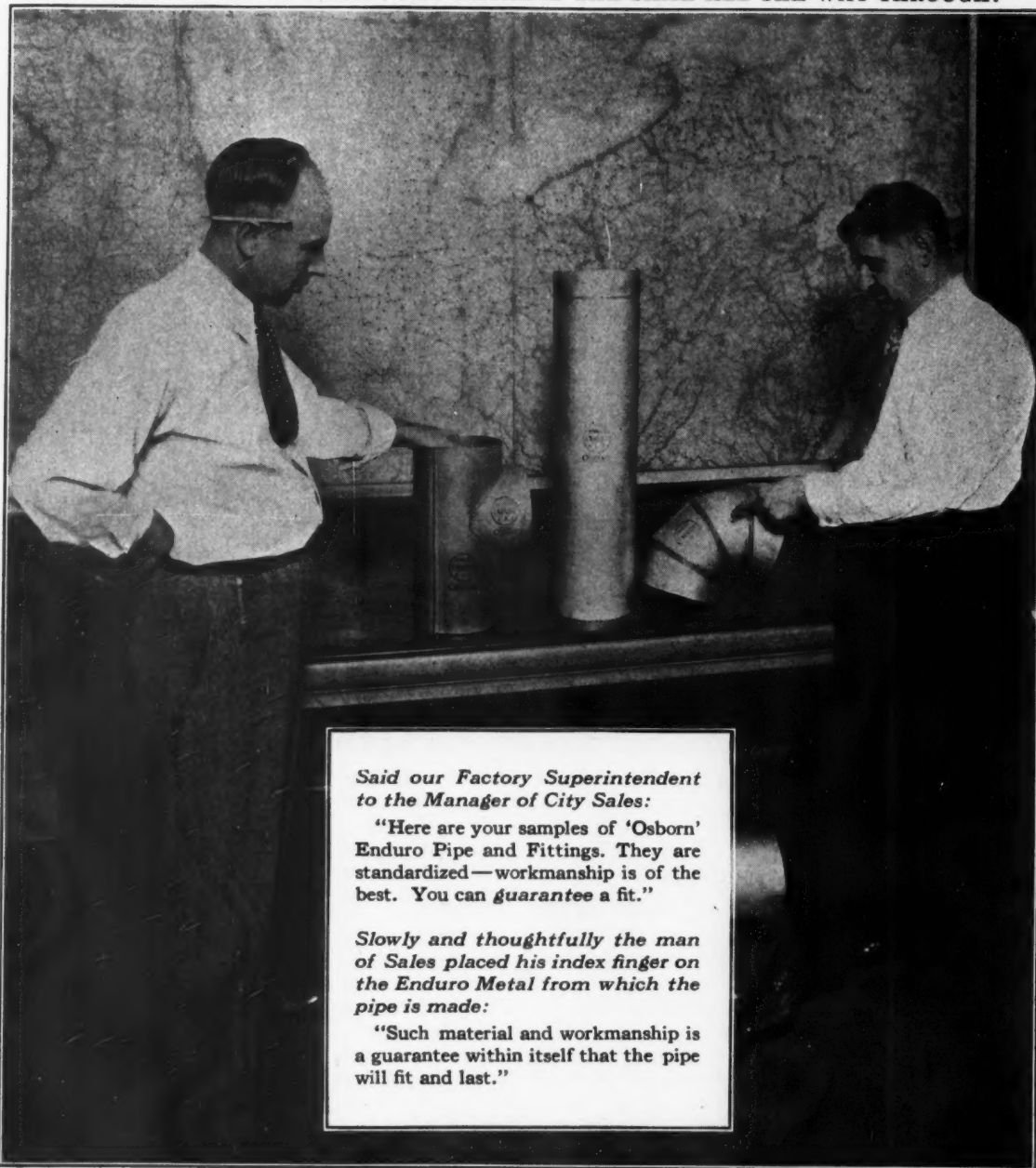
My Jobber is.....

Mention *AMERICAN ARTISAN* in your reply—Thank you!

# ENDURO K-A-2

## SMOKE PIPE AND FITTINGS

HAVE NO COATING TO FLAKE. THE METAL IS THE SAME ALL THE WAY THROUGH!



*Said our Factory Superintendent to the Manager of City Sales:*

*"Here are your samples of 'Osborn' Enduro Pipe and Fittings. They are standardized—workmanship is of the best. You can guarantee a fit."*

*Slowly and thoughtfully the man of Sales placed his index finger on the Enduro Metal from which the pipe is made:*

*"Such material and workmanship is a guarantee within itself that the pipe will fit and last."*

THE J. M. & L. A.  
**OSBORN CO**  
 MANUFACTURERS—DISTRIBUTORS  
 DETROIT-CLEVELAND-BUFFALO  
*"Everything Used in Sheet Metal Work"*



# HERE IT IS—The Kind of Furnace Regulator You Have Long Wanted!



Entirely Automatic » Electric Motor Driven »  
Extraordinarily Easy to Install » Practically  
Trouble-Proof » All at a price well within the  
means of the average Home Owner » The  
H & C Heat Control Provides a Wonderful  
Opportunity for Volume Sales and Hand-  
some Profits » » » » » » » »

**The Thermostat:** Extremely sensitive—operating on less than one degree of room temperature variation. Altogether reliable—housed in attractive moulded case.

**The Motor:** Shading ring induction type. Very quiet, causes no radio interference. No brushes, commutator or slip ring to cause trouble. Windings are enameled to waterproof and prevent corrosion.

**Built to Avoid Servicing.** Construction is simplified, all parts are made exceptionally strong, and those of steel are Cadmium

plated to prevent rusting. Thermostat carries the current only during short interval while motor is starting. This eliminates burning or pitting of points. On official test the H & C Heat Control operated perfectly 200,000 times (equivalent to 90 years of ordinary service) without displaying any appreciable amount of wear.

**Easy to Install.** Motor operates on 25 volts, making it unnecessary to use conduit or B.X. All fittings and easily understood directions are supplied. Installation is therefore easily and quickly made by any mechanic.

In every detail the H & C Automatic Heat Control fully measures up to those high standards of quality construction maintained by the Hart & Cooley Organization for more than 30 years. It is unquestionably an outstanding value.

Write at once for complete details,  
or see this Outstanding Regulator  
at your Jobber.

## HART & COOLEY MFG. CO.

61 West Kinzie Street

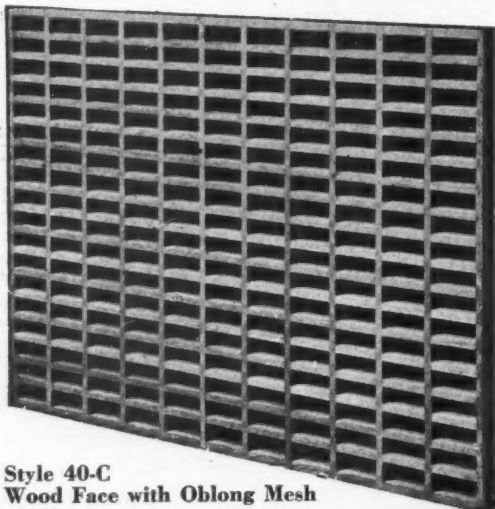
General Sales Offices

Chicago, Illinois

Say you saw it in AMERICAN ARTISAN—Thank you!

# MARSH

## WOOD FACES



**Style 40-C**  
**Wood Face with Oblong Mesh**

You will find the Style 40-C a popular design. Cold Air Wood Faces require special care in manufacture to enable them to stand up under use. Marsh Wood Faces insure complete satisfaction on every installation.

### A Superior Product . . . . . . . . . . at a Moderate Price

**L**ARGE production alone makes possible the moderate price of Marsh wood faces which are truly superior in quality and finish. Special machinery enables us to make them stronger, cleaner and more serviceable.

Marsh Wood Faces are flawless and attractive in appearance—they are as good as they look. Making quality wood faces is our specialty. Only first grade lumber is used.

You can't afford to cheapen any job with an inferior wood face. You can't go wrong if you standardize on Marsh wood faces.

They come in all standard and special sizes for cold air intakes.

*If you want to be certain of enduring quality, specify Marsh Wood Faces. Your jobber has them. Write for illustrated catalog showing complete line.*

**The Marsh Lumber Co., Dover, Ohio**



**ROBINSON GEM FURNACE**  
*Pipe or Pipeless*

## Over a Hundred Dealers Are Profiting by the Robinson Merchandising Plan

**F**OR almost two years our new plan of merchandising the Robinson Gem Furnace through dealers has been in force. Beginning experimentally in a limited territory we have been gradually extending our service so that we now serve over 150 dealers—all of them enthusiastic about the Robinson Gem and our new merchandising plan.

If you are interested in a real oversized furnace with ratings certified by the National Warm Air Heating Association at a price enabling you to meet competition you will certainly want to know more about the Gem.

A two cent stamp will bring all the details by mail. No salesman will call on you,—we depend upon the furnace to sell itself to you. This enables us to put the equivalent of the usual high selling cost into the quality of the furnace and to pass on some of this saving to the dealer.

*We Have Little to Tell You Here—  
Plenty If You Write*

**ROBINSON FURNACE COMPANY**  
213 Austin Avenue Chicago, Illinois

*Mention AMERICAN ARTISAN in your reply—Thank you!*

# KORECTAIRE

## The Three Essentials of AIR CONDITIONING Are Combined in This Unit—

**HUMIDIFICATION...  
POSITIVE AIR MOTION  
PURIFICATION.....**

**E**VERYONE nowadays is thinking and talking about air conditioning. They are interested in it. Some day they are going to have it. Most of them do not realize that in a well designed warm air heating system equipped with a KORECTAIRE, they have all the essentials of an expensive and elaborate air conditioning system. And the KORECTAIRE is well within the financial reach of every home owner.

With the KORECTAIRE you provide positive air circulation, even distribution of heat to every room, humidification, and clean, washed air. Yet it is so compact that it can be readily adapted to any existing warm air furnace installation. It is equipped with an adjustable boot which fits any furnace from 36 inch to 64 inch casing diameter.

With the KORECTAIRE the way is opened to you not only in the better class homes which demand this modern heating service but in schools, churches, theatres and other public gathering places.

Twenty feet of evaporating surface enables adequate humidification; forty feet of dust collecting surface; without obstruction of air movement. The fan unit is positive, quiet and efficient.

With the KORECTAIRE you can offer your prospects a really superior air conditioning service at a moderate price. A size for every need.

**MAIL THIS COUPON TODAY!**

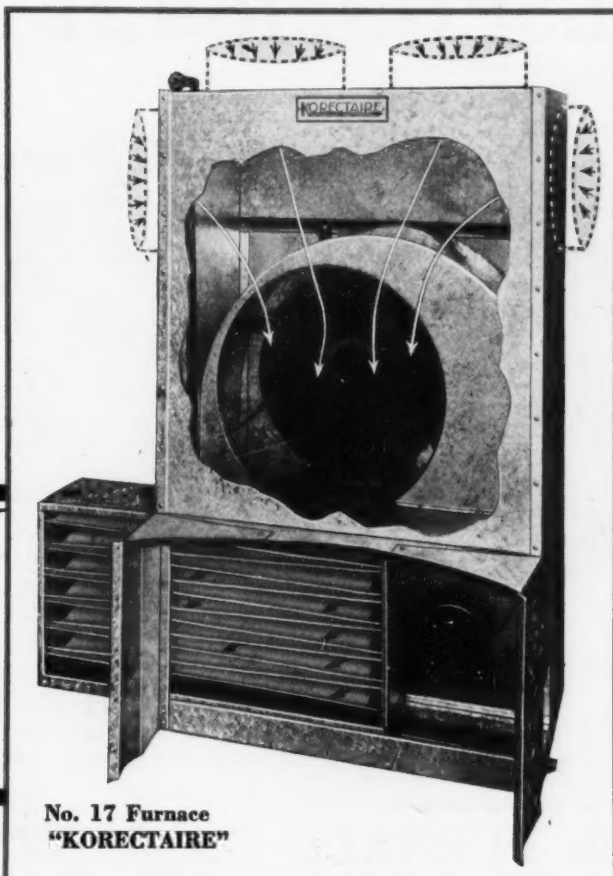
**WATT MANUFACTURING CO.**  
Sterling, Illinois

Gentlemen: Send me full details and prices on the KORECTAIRE Machine ☐ on the KORECTAIRE Booster Fan ☐.

Name.....

Address.....

Town..... State.....



No. 17 Furnace  
"KORECTAIRE"

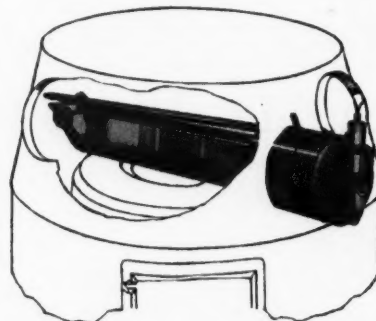


KORECTAIRE Booster Fan  
Write for details

*Say you saw it in AMERICAN ARTISAN—Thank you!*



## SIMPLEX—an Automatic Humidifier that is truly AUTOMATIC



WITH the Simplex Automatic Humidifier the word automatic does not mean merely an automatic means of keeping the evaporating pan filled. The Simplex is truly automatic in that the rate of evaporation controls the volume of water which is fed into the pan.

This humidifier has no float. It is the original drip and sight feed. Placed on the market only four years ago it is now stocked by leading jobbers and profitably sold by dealers all over the country.

It can be installed in an hour in any make of warm air furnace. Made of copper and brass, it will outlast any furnace in which it is installed.

Used as standard equipment on well known furnaces. Make them standard equipment on your installations.

*Write for details of our unusually attractive offer to dealers, jobbers or manufacturers*

### SALLADA MANUFACTURING COMPANY

720 South 4th Street

Minneapolis, Minnesota

## UNDIVIDED RESPONSIBILITY

### June-Aire Blower Furnace Unit Built Complete in One Factory

*For homes, churches, theatres  
factories, and public  
buildings*

WE manufacture the furnace, the blower, the humidifier, the complete unit, with or without square casings in color.

We supply wiring diagrams, plans and directions for erecting. The complete June-Aire system is offered with any of the following furnaces, all of our manufacture:

1. American Self-Cleaning, cast iron, open dome furnace. (Five sizes.)
2. Lincoln Cast iron Top Radiator Furnace. (Four sizes.)
3. Lincoln Crescent Radiator Steel Furnace. (Six sizes—two styles.)
4. Lincoln Economizer Type Oil Burning Steel Furnace. (Four sizes.)
5. American Gas Furnace. (A tested gas furnace, approved by the A.G.A. Wide range of sizes.)
6. American Horizontal Tubular furnaces for large buildings.

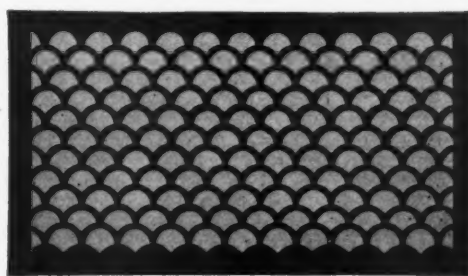
We make rotary multi-vane blowers, disc fans, and The American Heat Hustler (the fan for a single warm air pipe). Buy complete blower furnace units and take advantage of the help and experience of a company which has been in the blower furnace heating business for more than twenty-five years.

Send for catalogue and complete information

**AMERICAN FOUNDRY & FURNACE CO. BLOOMINGTON ILLINOIS**

*Mention AMERICAN ARTISAN in your reply—Thank you!*

**You  
can rely  
on**



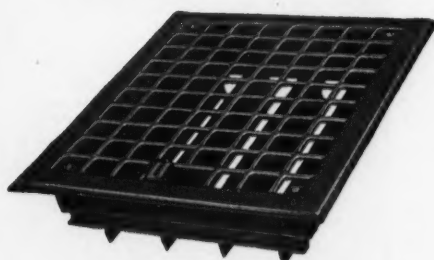
WROUGHT STEEL AND BRONZE GRILLES

**INDEPENDENT**

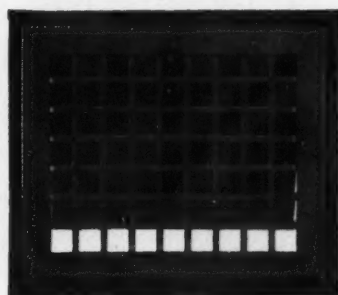
**for all your  
register needs**



BASEBOARD REGISTERS



FLOOR REGISTERS



WALL REGISTERS

In the wide variety of styles and most attractive finishes comprising the Independent line, there is the Register, Cold Air Face, Ventilator or Grille exactly suited for any job. By making the installation all-Independent, you attain the utmost in harmony, utility and durability.

*Any Size — Any Finish*

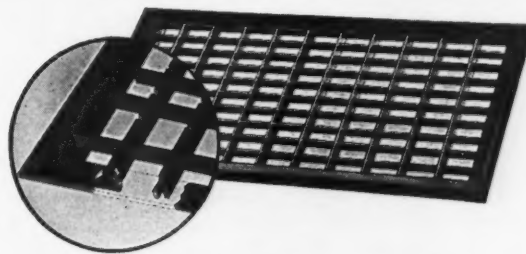
**INDEPENDENT REGISTER AND  
MANUFACTURING COMPANY**

3741 East 93rd Street • Cleveland, Ohio

**NEW INDEPENDENT CATALOG**

*Complete — Simply arranged  
Easy to order from*

**WRITE FOR YOUR COPY**



"FABRIKATED" COLD AIR FACE

*Say you saw it in AMERICAN ARTISAN—Thank you!*



# --- BY LONG ODDS THE MOST POPULAR! LINE OF REGISTERS!

## Why?

*Simply because  
H & C registers, more than any  
others, contain those qualities  
which make selling easier and  
promote greater customer  
satisfaction*

A constantly increasing number of furnace dealers are standardizing on the H & C line and are talking its obvious superiorities; for they find that its greater air capacity and general superior construction help greatly in making furnace sales.

There's a style and a type best suited for every purpose. See them at your jobber.

*Catalog on Request*

# HART & COOLEY MFG. CO.

CHICAGO—61 West Kinzie St.

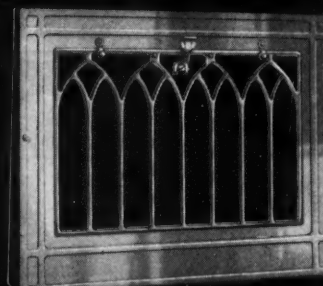
NEW BRITAIN, CONN.—Corbin Ave.

PHILADELPHIA, 1600 Arch St. BOSTON, 75 Portland St.

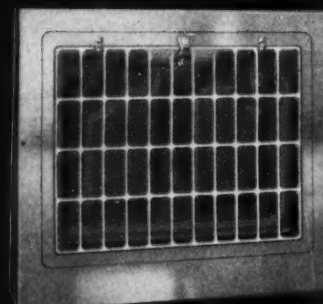
NEW YORK, 101 Park Ave. NASHUA, New Hampshire

Factories at Holland, Mich.—New Britain, Conn.—Nashua, N. H.

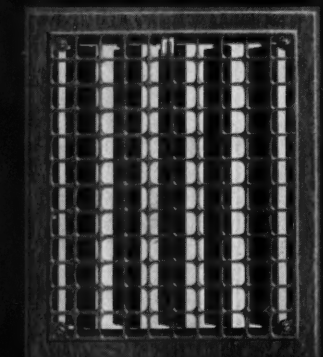
Also a Complete Line of Furnace Regulators, Chain, Pulleys,  
Dampers and the H & C Automatic Heat Control



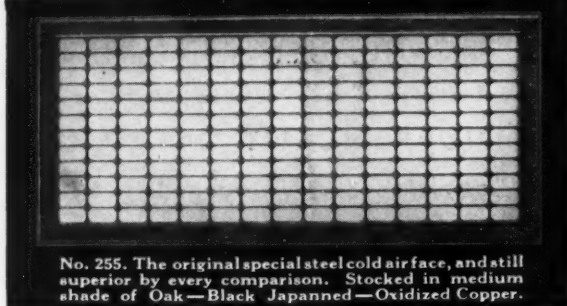
No. 110 Series. Size 8x12 has full capacity for 10" Pipe. Side-wall register and baseboard cold air intake to match.



No. 150 Series. Two-piece register, long a popular model. Also made in one-piece type, No. 160.



No. 200 Floor Register. Unbreakable steel. Unequalled in air capacity. Stocked in Oak and standard finishes.



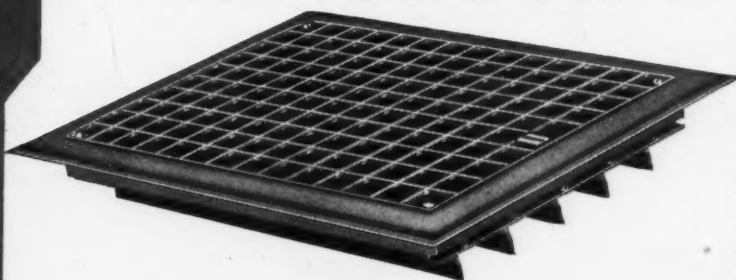
No. 255. The original special steel cold air face, and still superior by every comparison. Stocked in medium shade of Oak—Black Japanned—Oxidized Copper.

Mention AMERICAN ARTISAN in your reply—Thank you!



# NOW— for 1931

## ROCK ISLAND INTRODUCES A *Modern* STEEL FLOOR REGISTER



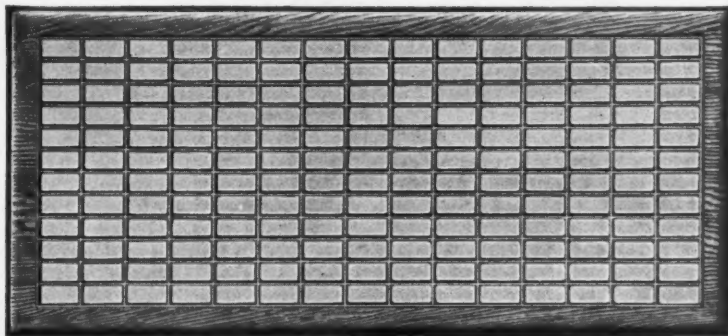
**T**HE overall depth of this register is only  $1\frac{1}{4}$  inches. This saves weight and space in shipping, storage and carrying on the job.

**T**HE louvre mechanism, a new and exclusive feature, is extremely simple and noiseless. The small inconspicuous and easy working operating lever sets the louvres at any desired opening—and they stay set.

A neater face and narrower bars for maximum air capacity. Made in all standard sizes and finishes and also in our new attractive and durable Oak Grain finish.

## —AND A STRONGER COLD AIR FACE

**S**TRONGER because of an increased number of support bars—properly placed. Designed also for greater free air capacity. Another feature is shallower overall depth— $1\frac{3}{8}$  inches. This allows installation without cutting support bars into joists. Our new catalog is now ready. The new Steel Floor Register and the new steel Cold Air Ventilating face are fully described as well as the complete line—No-Streak, Out-O-Wall, Island City and Vol-Um Side Wall Registers.



Companions to  
the famous



Get set for 1931 now with the complete Rock Island  
line of modern registers

## SEND THE COUPON

ROCK ISLAND REGISTER CO.  
Rock Island, Ill.

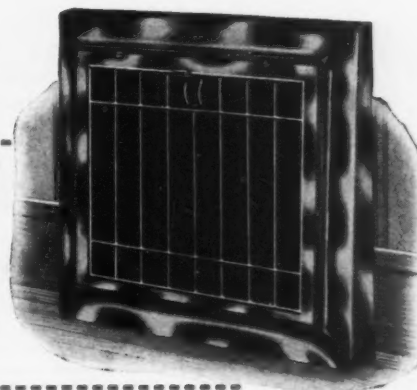
Gentlemen:

Send me your new catalog which describes in detail your new Steel Floor Register and Steel Cold Air Ventilating Face as well as your full line of Steel Side Wall Registers.

Name.....

Address..... Town..... State.....

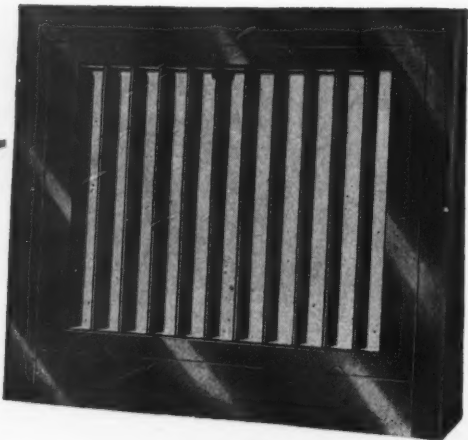
A.A.



Mention AMERICAN ARTISAN in your reply—Thank you!

The exclusive design  
of this register means  
**EXTRA PROFIT**

Be modern — sell this  
modern register and  
make more money —



## NEW STANDARD STEEL BASEBOARD REGISTER

**W**HEN open the wafer thin shutters allow maximum air capacity. The operating device is simple and effective providing positive control of the air flow.

When closed the neat attractive panel effect harmonizes with all modern interior decorating. The face is secured by just two screws. It is easily detachable. It is the easiest register to keep clean.

### *Women Prefer the New Standard*

Merely showing the New Standard Register clinches many installation sales. Live dealers make extra profits by replacing old fashioned registers with the modern New Standard.

### ORDER FROM YOUR JOBBER

*Write today for the New  
Standard catalog*

### WATERLOO REGISTER CO.

Waterloo, Iowa

SEATTLE, WASH., Office: 2211 1st Avenue  
LOS ANGELES, CAL., Office: 822 Clanton Street

**Keeps  
Costs  
Down**



*The Shear  
Keeps Sharp  
Even After  
Months of  
Hard Use*

### The Marshalltown Rotary Shear

handles sheets of unlimited width and cuts curves in any direction. It can be operated by hand or power.

Simple design, sturdy construction, and blades that stay sharp—these are its outstanding characteristics.

There are only three moving parts and the blade remains sharp even after months of hard service. Made of the finest tool steel, this machine will do ALL your cutting and do it accurately and quickly.

It is easy to operate—a fast worker and has nothing to get out of order. Its high quality and all around efficiency make it pay for itself in a short time by enabling you to turn out cleaner, faster work. Hand or Power Operated. Write for complete details today.

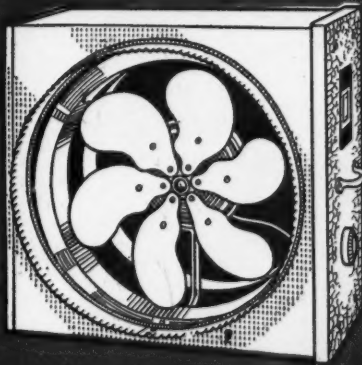
The Marshalltown Line includes Shears, Plate Bending Rolls, Pressure Gauges, Punch Pressers, etc. Write Department A.A. for our complete catalog.



This machine is our No. 18 Hand Power Shear. Every shop can use one or more. Takes sheets any size and does clean, accurate cutting.

**MARSHALLTOWN MFG. CO.**  
MARSHALLTOWN, IOWA

**—All  
Along  
the Line**

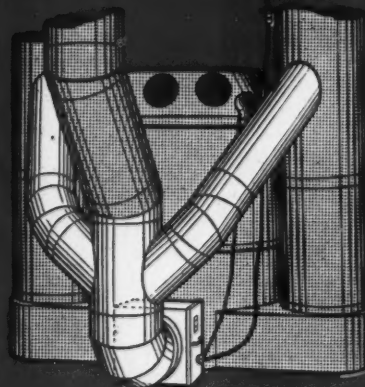


ALL SIZES FROM  
9 INCH TO 36 INCH

MERCURY  
CONTROL  
INCLUDED



EASIEST TO CONNECT  
ON MULTIPLE COLD AIR  
RETURN JOBS



# A-C *Thermostatically Controlled* Automatic HEAT BOOSTER

## Easy and Quick Installation...

**YOU sell** it quickly because its efficiency is easily demonstrated and its price is much less than others of similar type.

**You install** it quickly because its design enables you to connect it up with any cold air arrangement—one, two, three or four cold air returns—with very little labor and pipe expense.

You can make more forced air sales and bigger profits with the A-C.

All you need is an elbow or two and a few lengths of pipe.

And it is complete—shipped ready to install—Heat Booster, Fan and Unit Housing and Mercury Control.

**ORDER FROM  
YOUR JOBBER**

- 1~ **Efficient Automatic Operation**
- 2~ **Perfect Circulation**
- 3~ **Simple—Foolproof**
- 4~ **Quiet—No Vibration**
- 5~ **Costs Less**

**NO** other fan is so easy to install and none so easy to get at for oiling and inspection. The motor and fan slide out of unit box.

On large jobs or any job where two fans are desirable two A-C Boosters can be used with one Mercury Control.

The A-C fits all makes of furnaces and increases efficiency with any fuel—coal, oil or gas.

The A-C will help you sell more oil burners because with the A-C Booster your customers will use less fuel.

Let us tell you all about the A-C Automatic Heat Booster.

*Send the coupon today for full details and prices*

**A-C Manufacturing Company**  
417 Sherman Street Pontiac, Ill.

**Send the  
Coupon  
Today**

**A-C Manufacturing Company  
Pontiac, Illinois**

Gentlemen:

Send me complete descriptive literature and prices on all sizes of A-C Automatic Heat Boosters.

Name.....

Street Address.....

Town.....State.....

Say you saw it in *AMERICAN ARTISAN*—Thank you!



... "We recommend  
**Anaconda Copper**  
*for all buildings . . . .*

*from racing stables to power plants,"*  
 says **GEO. W. SCHAEFFER**

F. W. Schaeffer



Geo. W. Schaeffer

The Schaeffer Company of Chicago, was established in 1880 by the father of the present owners. Many fine copper roofing and ventilating jobs have been handled by this firm in their half century's existence. Mr. Schaeffer says:

"During the fifty years we have been engaged in the general sheet metal, roofing and ventilating business we have made a special effort to handle nothing but high-class work, and at all times urge the use of copper, which in itself means the best quality and most economical grade of sheet metal work. We have handled all types of building work—United States Post Offices, asylums, hospitals, schools, power plants, racing stables and residences, and we

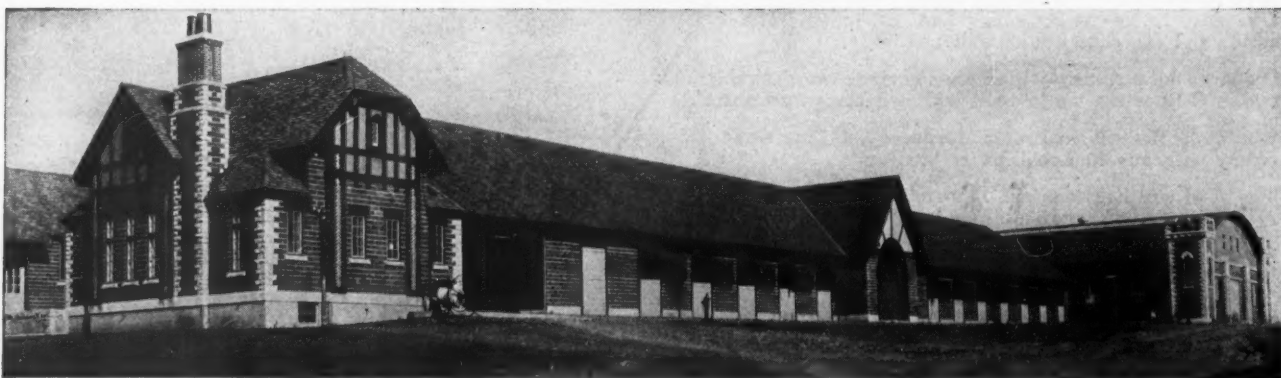
recommend Anaconda Copper for all of them."

The opinion of this experienced firm is similar to that of leading contractors throughout the country. The ever-growing recognition of the importance of holding down upkeep costs in all types of buildings offers profitable business opportunities for those who standardize on Anaconda Copper. Customers know that when it is installed by capable workmen, it never fails to give satisfactory service.

Anaconda Copper in the form of sheets, rolls, and Economy Strips is stocked by leading distributors, assuring prompt deliveries to all sections of the country. The American Brass Company, General Offices: Waterbury, Connecticut.

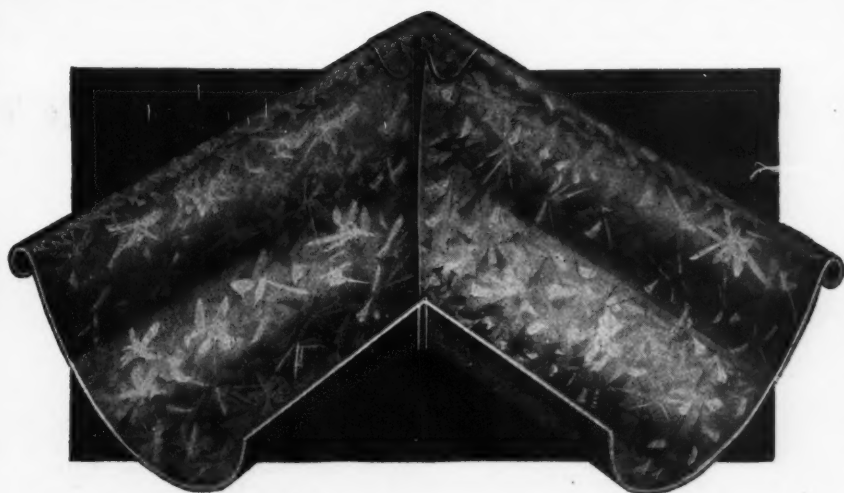


*Sheet Metal Work of*  
**ANACONDA COPPER**



Leona Farms, famous racing stables of Mr. John Hertz, Chairman of the Board of the Yellow Cab Company. On these buildings the Schaeffer Company installed gutters and downspouts of Anaconda Copper, fabricated by Barnes Metal Products Co., and purchased through Garley Steel Co.

Say you saw it in *AMERICAN ARTISAN*—Thank you!



**The BARNES Super-Miter.**  
*Uncomparably Rigid*

**Full of Merit**  
**That is why**  
***Barnes***  
***Dominates***



**BARNES**—that specially strength constructed Eaves Trough with the square, firm edge, meets all non-sagging test requirements.

**Cash in on the Barnes line.**  
**It is a genuine asset to the business growth of every sheet metal contractor in the country.**



**The BARNES Super-Self-Draining End and Outlet with Lock-Tite End Cap**



**BARNES METAL PRODUCTS COMPANY**

4425 West 16th Street CHICAGO, ILLINOIS

Manufacturers of Conductor Pipe, Elbows, Eaves Trough and Fittings. - All Sizes - All Metals

*Mention AMERICAN ARTISAN in your reply—Thank you!*



## DISCOVER THE PROSPECTS FOR MONEL METAL

*Cabinet Tops*

*Table Tops*

*Range Hoods*

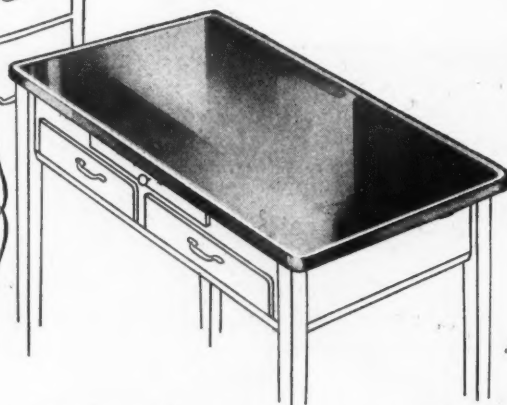
*Oven Linings*

*Laundry Chutes*

*Sinks*

*Drain-boards*

*Ornamental Work*



*Get some of this business for your shop . . .*

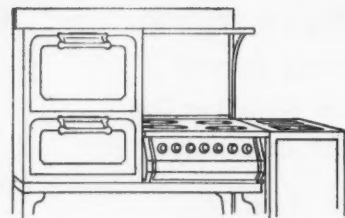
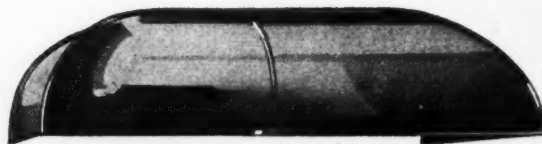
THE demand for Monel Metal household equipment is growing at such a fast clip that every well-to-do home offers splendid possibilities for profit to self-starting metal workers.

Right now this extremely profitable market is wide open to alert metal workers. Many of the most popular Monel Metal items must be "custom-made" to individual requirements, and you are the logical one to supply this demand in your community.

Your best prospects—the ones who own good houses and read the leading magazines are already "sold" on the advantages of Monel Metal. Steady, powerful national advertis-

ing has done that. Your customers know that Monel Metal never rusts ...that it is highly resistant to corrosion by food juices, cooking vapors and cleaning compounds ...that it resists denting and abrasion because it has the strength of steel with no coating to chip off. They know that Monel Metal has these remarkable properties because it is two-thirds Nickel—and that Nickel is the strengthening, whitening partner that brings beauty and durability to other metals.

But it's up to you to suggest these uses of Monel Metal to your better prospects. They'll buy when they know *where* to buy!



# MONEL METAL



Monel Metal is a registered trade mark applied to a technically controlled nickel-copper alloy of high nickel content. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

*Say you saw it in AMERICAN ARTISAN—Thank you!*



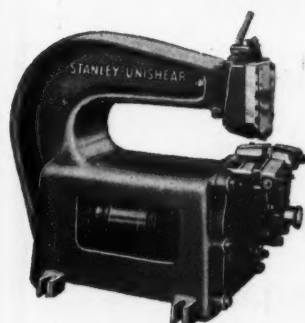
# REGULAR OR IRREGULAR DESIGNS



cut them  
easily  
with

## Stanley - Unishear

**I**LLUSTRATED here are some of the designs which have been cut by Stanley-Unishears. These machines cut without leaving burr or distortion and will follow any line accurately. Straight, curved or irregular cuts, notches, angles—they're all handled with equal ease.



**Stanley - Unishear  
Model 0-15**

Capacity 14 U.S. Gauge  
(5/64") sheet iron. Speed  
15 feet per minute.

Two models of Stanley-Unishear are shown here. Other models handle up to 1/4" boiler plate. Tell us the type of work you are doing, we will be glad to suggest the machine best suited to your requirements.

**THE STANLEY ELECTRIC TOOL  
COMPANY**  
New Britain, Conn.

**STANLEY**

**Sales Offices and Service Stations:**

New York Chicago Philadelphia  
Detroit Cincinnati Kansas City Los Angeles Seattle San Francisco Montreal Toronto



**Stanley - Unishear  
"Mighty Midget"**

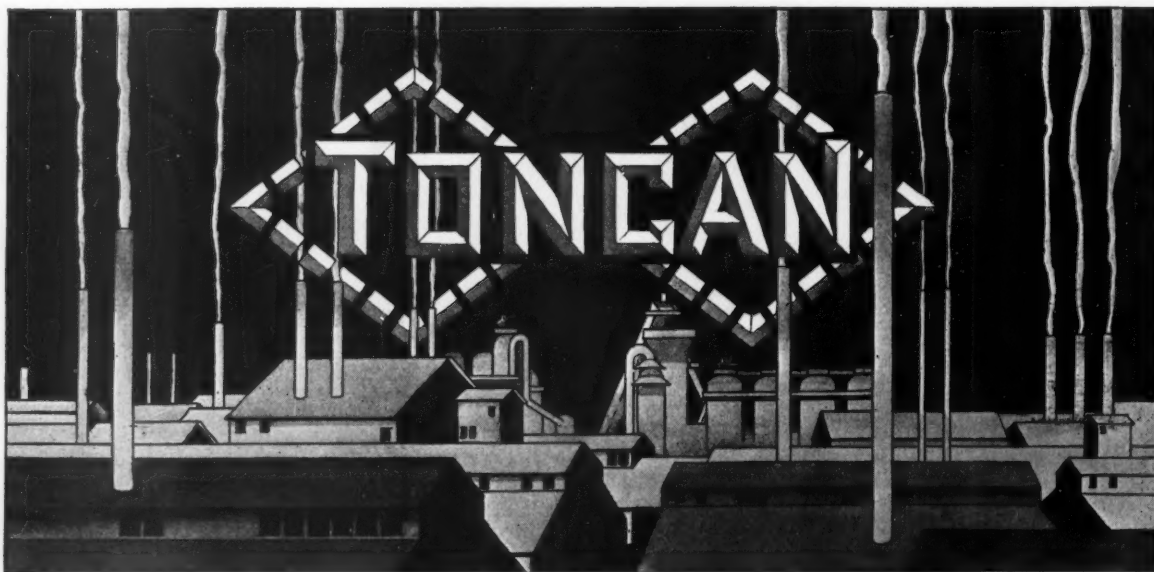
*"The power driven hand shear"*

Weighs only 6 1/2 pounds.  
Capacity 18 U.S. Gauge  
(.050") sheet iron. Speed  
15 feet per minute.

## STANLEY ELECTRIC TOOLS



Say you saw it in *AMERICAN ARTISAN*—Thank you!



## 1931 WILL BE DIFFERENT—

Cheer up—good times are coming—1931 will be different for the sheet metal business that builds prestige on Toncan Iron. For this longer-lasting alloy sheet of pure iron, copper and molybdenum resists rust and corrosion and actually attracts business from the wise buyers who know from experience the folly of buying on a low price basis.

"Toncan for Permanence" will convince you that this enduring iron deserves a place in your plans for 1931. Copy free on request.

# REPUBLIC STEEL CORPORATION

GENERAL OFFICES  YOUNGSTOWN, OHIO

*Mention AMERICAN ARTISAN in your reply—Thank you!*

**IN THIS  
BEAUTIFUL  
MODEL HOME  
YOU'LL FIND THE**



## HYRO UNXLD DAMPER QUADRANT

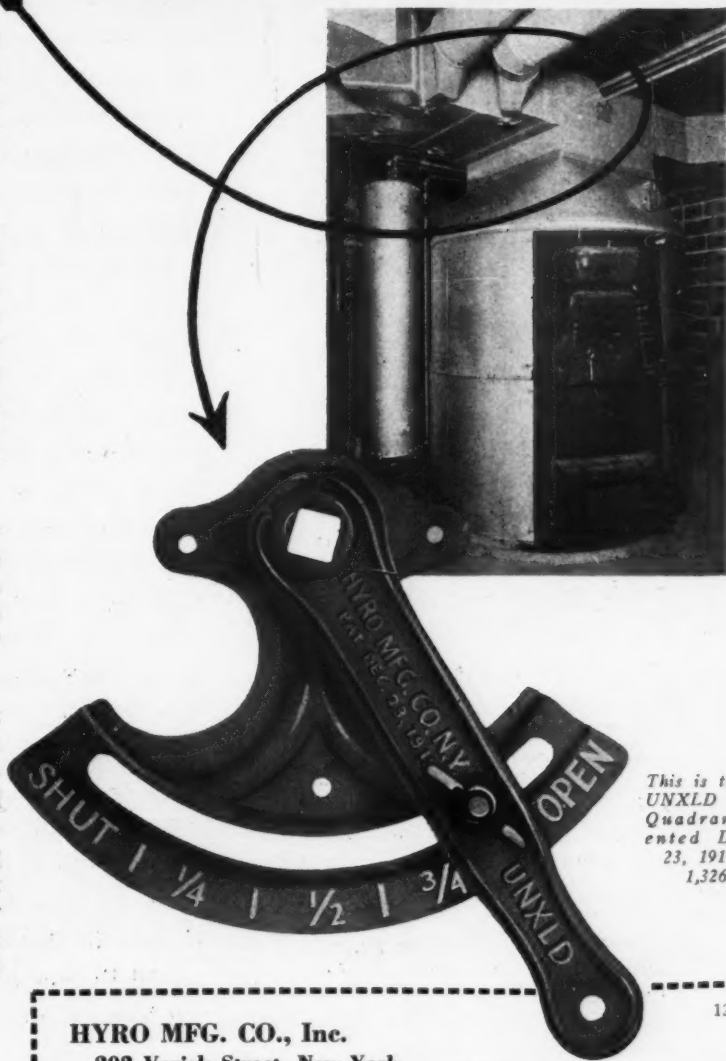
THE picture above shows the beautiful model home recently completed at Des Moines, Iowa, under the auspices of the *Des Moines Register*. Forty thousand people inspected this house from cellar to garret.

When the Green Foundry & Furnace Works at Des Moines set about to install a modern warm air heating system in this model home it was only natural that they should look to the Hyro UNXLD for damper regulation. The No. 930 Green Colonial furnace, the No. 125 Miles fan, the Reed filters, all this fine equipment demanded the very best in damper regulation: *The Hyro UNXLD Damper Quadrant*.

For the Hyro UNXLD gives positive damper control. A glance tells the damper's exact position which can be changed in a jiffy by simply loosening and tightening a wing nut; and when adjusted the damper can't slip or swing.

What is still more important to the sheet metal man, the Hyro UNXLD is installed with ease on both square and round ducts of any size. It makes an attractive and efficient-looking job and never gives trouble. That is why heating and ventilating men everywhere prefer it. If you are not now using the Hyro UNXLD Damper Quadrant, by all means do so on your next job. The coupon will bring you prices and full information.

**HYRO  
MANUFACTURING  
CO., INC.  
202 VARICK STREET  
NEW YORK, N. Y.**



*This is the Hyro  
UNXLD Damper  
Quadrant, Pat-  
ented December  
23, 1919, No.  
1,326,096*

**HYRO MFG. CO., Inc.**  
202 Varick Street, New York

Gentlemen:

Please send me price list and descriptive folder on the Hyro UNXLD Damper Quadrant.

Name.....

Address.....

City.....

State.....

12-30

Say you saw it in *AMERICAN ARTISAN*—Thank you!



Founded 1880

# American Artisan

THE WARM AIR HEATING  
AND SHEET METAL JOURNAL

Published Every  
Other Saturday

Covering All Activities  
IN

Gravity Warm Air Heating  
Forced Warm Air Heating  
Sheet Metal Contracting  
Air Conditioning  
Industrial Roofing  
Merchandising  
Ventilating

*If it were possible we would like to call your especial attention to every story in this issue. This is, of course, impossible in view of the large number of articles. But if we do say so ourselves, every story was selected for its particular value to this issue which has for its main idea—merchandising.*

*In the following pages you will find at least one article which applies directly to your particular problems or your particular field, even if you are specializing on some kind of work.*

*If it is permissible, we should like to suggest that this issue be filed away for reference from time to time throughout the coming year. As problems come up, turn to this issue and see what others have done to solve the difficulties confronting you.*

*It is not amiss, either, to call attention to the advertising pages. There you will find the latest developments in heating.*

## YEARLY SUBSCRIPTION PRICE:

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VOL. 99, NO. 26

**DECEMBER 20, 1930**

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## PORTER-SPOFFORD-LANGTRY CORPORATION

139 North Clark Street, Chicago— Telephone Central 7670

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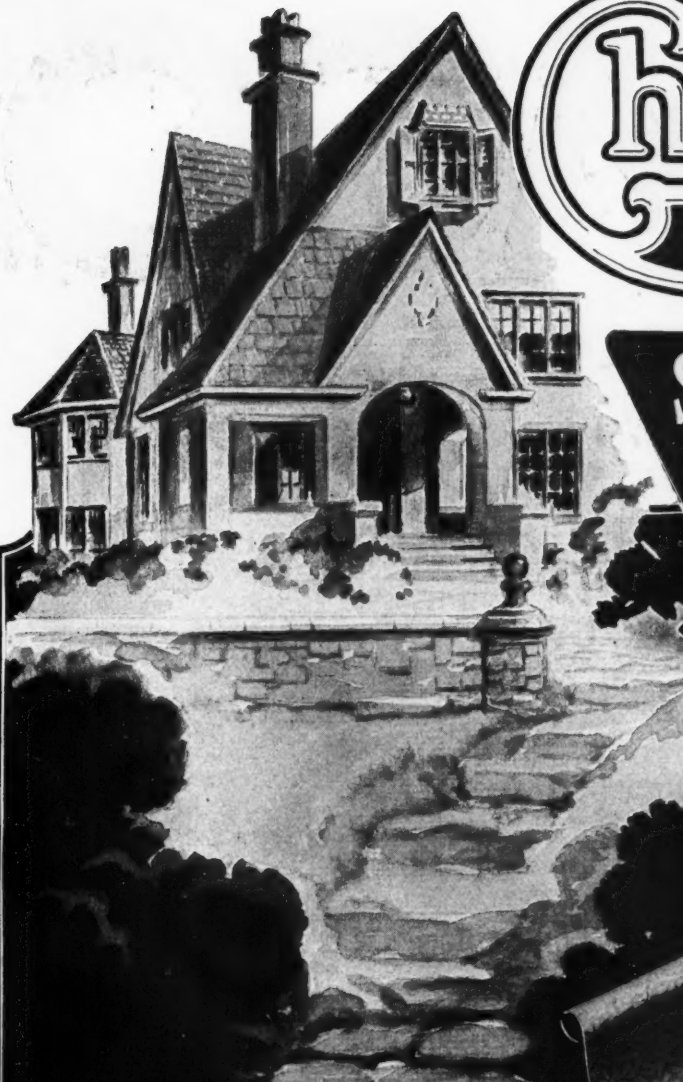
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# Champion PRODUCTS

**SEAMED MITRES  
and ENDS**  
*as DURABLE  
as the  
WELD!*



**TUBE B**



**END D + END C = END A**

*The* **BEST EAVES TROUGH MITER IN THE WORLD**

**BRADEN MANUFACTURING CO.**  
TIERRE HAUTE — INDIANA

Mention AMERICAN ARTISAN in your reply—Thank you!

# ARMCO

## INGOT IRON

—preferred by sheet metal contractors  
for more than twenty years

**W**HEN a product keeps pace with the ever-changing requirements of an important industry for more than two decades, it must possess merit to an unusual degree.

That is the record of Armco INGOT IRON in the sheet metal construction industry. And during this long period it has met every demand of thousands of exacting contractors: customer acceptance and ready salability, easy forming qualities, and proved rust-resistance. On the latter score, Armco INGOT IRON has demonstrated its ability to last, and satisfy. Today, this highly-refined iron possesses the longest record of actual service of any low-cost, rust-resisting sheet metal.

If your supply of Armco INGOT IRON sheets and formed products is running low, we suggest that you replenish your stock by calling on your nearest



George and Abe Shustick, sheet metal contractors of Columbus, Ohio, are well pleased with the satisfied customers and increased business that Armco INGOT IRON has brought to them. This is expressed tersely and yet significantly in their letter: "Our tie-up with Armco was a wise move."

Armco distributor. He will serve your needs, promptly and satisfactorily.

**TUNE IN—The Famous Armco Concert**  
Band broadcasts every Thursday Night  
WLW—700 K. Cincinnati  
Nine to nine thirty E. S. T.

Back of this familiar symbol is nearly thirty years' experience in the manufacture of special analysis iron and steel sheets and plates. When you want a workable, rust-resisting metal, be sure to see this triangle and the words, "Armco INGOT IRON." It is your assurance of dependable service.



**The AMERICAN ROLLING MILL CO.**  
Executive Offices, Middletown, Ohio  
Export: The ARMCO International Corporation

**DISTRICT OFFICES:**

Chicago  
Cincinnati  
Cleveland

Detroit  
New York  
Philadelphia

Pittsburgh  
St. Louis  
San Francisco

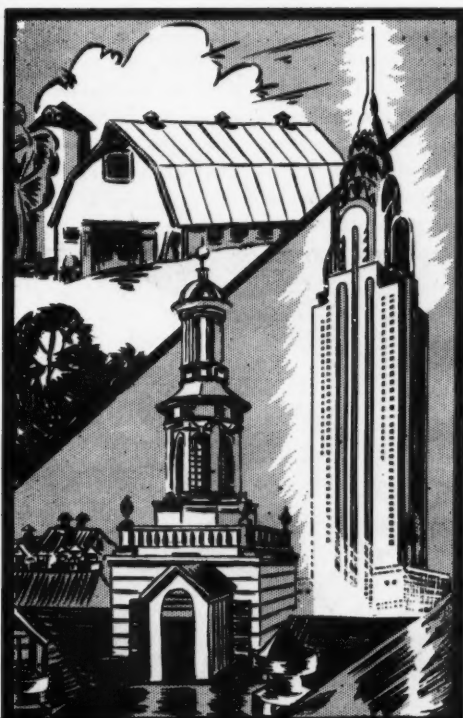
**"BE SURE IT'S MADE OF ARMCO INGOT IRON"**

Say you saw it in AMERICAN ARTISAN—Thank you!



50<sup>th</sup>

ANNIVERSARY



*Metal has always had many uses. Yet today we are entering an era of even wider use.*



*Warm air as a means to air conditioning will undoubtedly be the heat of the future.*

## FOREWORD

**I**N the swift course of progress and the intense competition of modern business, past history is apt to be forgotten. In truth, no industry, today, has much need for past history.

1 1 1

It does no harm, occasionally, to pause for a minute and look back. Oftentimes this looking back gives us courage to look intently into the future. And courage to really look into the future is not so common a virtue as one might think.

1 1 1

Probably no other industry could have survived the grievous errors the warm air heating industry has committed. Yet in spite of these internal troubles our industry still pushes ahead. There must be sound reason for this survival. It is, we feel, because basically warm air heat is the ideal heating principle.

1 1 1

Let us take this moment to pause and look into the future. Warm air heating is being talked by the man on the street. Not as furnace heat or hot air heat, however, but as some new science known as air conditioning. He wants to know what it is and what it will do for him and his family.

1 1 1

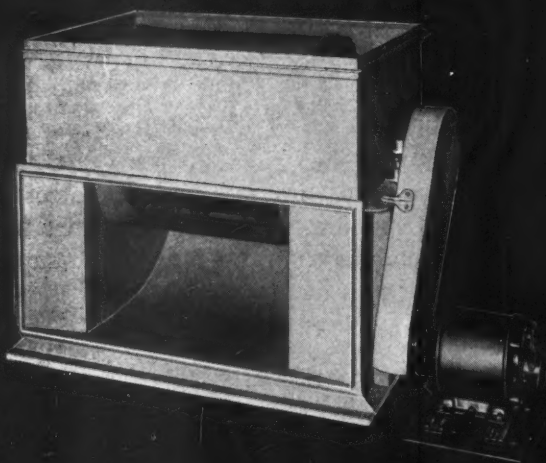
So it was with the motor car when it came on the market. So it was with the radio and the washing machine and the oil burner, and a whole host of other things the American public has spent millions of dollars for. But in no case did the public's money come without asking. It had to be sold.

1 1 1

We are going to have to do just this. The public won't come to us. We have got to go to the public, with facts and figures and every argument available. The message of conditioned air must be told day in and day out; by every available means, through every up and down of public fancy. If this is done, our industry will find the new and greener pastures.

1 1 1

This issue, the 37th Furnace Annual, celebrates fifty years of AMERICAN ARTISAN participation in the fields of warm air heating and sheet metal contracting. It also indicates AMERICAN ARTISAN confidence in the future.



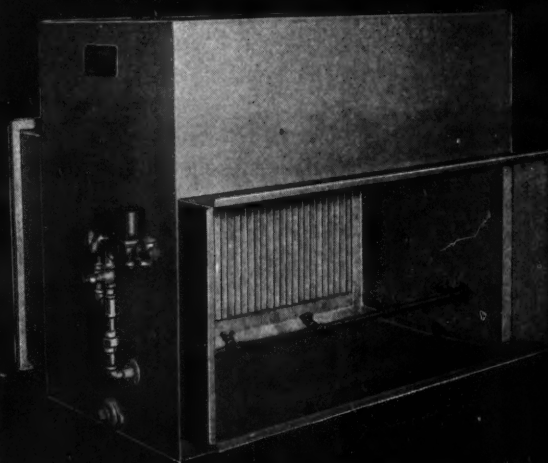
SILENTAIR FAN (BLOWER)

The "SILENTAIR" fan (blower) is of the centrifugal, or squirrel cage type, operated at a very low speed by a silent "V" belt drive. It is the only type of furnace fan that will move air against pressure without noise. Three speed pulleys are provided on the motor and fan. During the summer the belt should be shifted to the high speed for maximum ventilation and cooling. All bearings are outside the fan and easily accessible for lubrication. The motor consumes a negligible amount of current. If desired the blower can be installed without the air washer and you will have all the advantages of forced air heating and cooling.

# SILENTAIR

## AIR CONDITIONING UNITS

The "SILENTAIR" air washer is an ingenious device very similar to the larger washers used in public buildings. City water pressure forces a finely divided spray from the many nozzles. The size of the spray is indicated on the pressure gauge and is easily adjusted by the convenient needle valve. The water supply is controlled electrically to operate only when the blower is in motion. The air is driven through the water spray where it is cleaned, deodorized, purified, humidified and COOLED. It is then driven through eliminator plates which remove the surplus water and drain it off to the sewer. Simple, economical and absolutely silent.



SILENTAIR WASHER

### SILENTAIR FURNACE FANS & AIR WASHERS

Manufactured by  
A. GEHRI & CO. INC., TACOMA, WASH.  
Established 1892

Mention AMERICAN ARTISAN in your reply—Thank you!



# American Artisan

THE WARM AIR HEATING  
AND SHEET METAL JOURNAL



Vol. 99

CHICAGO, DECEMBER 20, 1930

No. 26

## It Must Be Merchandising!

**T**HE year just ending has been a tough period for the warm air heating fraternity. Manufacturer, jobber and dealer alike have suffered. But the year has opened our eyes to one all-important fact, that is—that to succeed we have all got to become merchandisers.

We don't expect every reader to take this thought to heart and go right out and ring every door bell in his community. The warm air heating industry wouldn't be in the condition it is today if we had done this door-bell ringing.

But in spite of pessimism and doubt and hesitancy and lack of courage to do something we have never done before, the industry is awakening to the fact that if we are to survive we have to become an industry of salesmen as well as an industry of mechanics.

As a matter of fact, the day of the mechanic-dealer is rapidly passing out of the picture. True, we still have to know the mechanics of furnace installing and sheet metal work, but the dealers who are most successful are those who are making their foremen responsible for the mechanical features while the owner does the selling, designing, collecting and planning.

Right here we want to hedge a little and put in this thought. This condition is without a doubt coming to pass. But it is making itself felt in direct ratio to the size of the community where the dealer is operating.

To be specific, in large towns the dealer simply can't be the mechanic as well as the owner. In the towns of from 25,000 to 50,000 the field is pretty well divided—about half the shop owners devoting themselves to the business end alone, while another half of the dealers are directing the construction of the job as well as being the business head.

In the smaller city and the village there is a preponderance of the combined dealer and mechanic. Probably the owner who does much of his own mechanical work will survive for a long time in the small community.

Nevertheless, we must not forget that towns are becoming cities and cities are becoming great urban communities, and, as each community grows, business all along the line has to expand or fall by the wayside.

We notice this. Most of the older generation are

skilled artisans. Many of the younger generation, on the other hand, are men who have come into the heating field from other lines of business and who know little or nothing about the mechanics of the industry. It is inevitable that the older will be supplanted by the younger, and in turn these men will be replaced by another generation which will undoubtedly be more business men than artisans.

There is no use kidding ourselves that our industry is different from any other. It isn't.

Hundreds of other industries have passed through the same troubles we are now in. And in practically every case the transformation has been from the mechanical to the merchandising.

If you want to check on this, think back over the transformation of the blacksmith to the mechanic and now the auto dealer. The dealer isn't a mechanic—he is a salesman. So with the radio. Our radio men today are salesmen primarily. So, too, with our competitors, the plumbers. Are the plumbers still packing kits? No. They are selling colored bathtubs. So, too, with any appliance now used in the home. The men in the business began as mechanics—but they had to become merchandisers to survive.

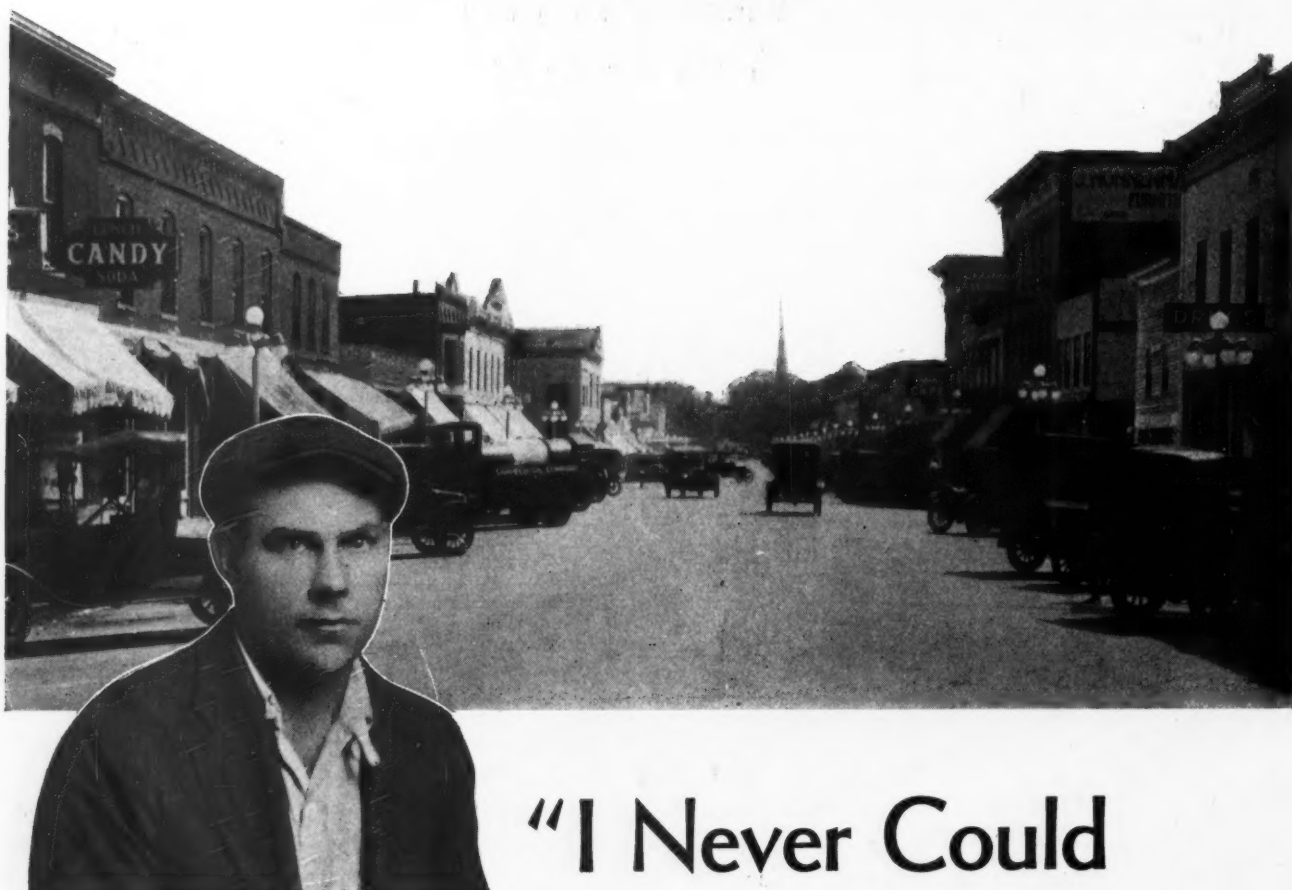
So it is with us. We are right now about to step into a field where fans and blowers, washers and filters, humidifiers and automatic control, oil and gas heat and stoked coal, and air conditioning are going to be the heart and soul of warm air heating.

To succeed in this new and greater field, we are going to have to *sell*.

Of course we ought to know how equipment should be put in, but there is going to be plenty to do to keep abreast of the designing, selling, advertising, and engineering which will be necessary for this newer field without having to do the mechanical work as well.

This business of becoming merchandisers is a most serious one. The change can't be made in a day, or a week, or a year. It will be a slow process—but—in just the length of time we take to make the change, in just that proportion will we find that business has expanded and that we are not mechanics—but business men.





"I am a small town dealer. My field is 6,000 persons counting children. Yet I can make money selling quality heating systems"

## "I Never Could Get Cheap Enough— Now I Can't Bid Too High!"

**I** AM a warm air heating and sheet metal contractor in a rural community.

My home town has only 6,000 population.

My shop is the kind the big city brothers look down on and wonder how on earth I make a living.

The truth of the matter is that until just a few years ago, I didn't.

For the benefit of those who have never lived or done business in a community like mine, I want to say that we have just as much competition as you fellows in the big cities have.

In my town there are five shops. We don't have a lot of houses going up. When a man builds a home in our town, he builds it to last for fifty years—and it does.

In our town if Henry Jones' gutter is leaking, every man, woman and child knows all about it.

So do the five heating and sheet metal contractors.

It has been said that the hand of Providence takes care of the dumbbells, but it has been my experience that waiting for Providence to bring success is like waiting for a fish to bite without a hook or a lure.

It has been my experience that every success can be chalked up to some well laid and well formulated plan and that this plan has been successfully executed.

Before this truth was impressed upon me I had struggled for years to make a living in my community. As a matter of truth, all that I had

been doing was to pursue an occupation.

I had a small shop on Main Street and handled all kinds of sheet metal work and installation of furnaces. My financial return was equal to the wages of a mechanic who has steady employment the year around.

It seems necessary to submit the egotistical statement that I was capable of producing any sheet metal products to satisfy the demands of my trade for design and construction, but I was everlastingly harrassed by the "boog-a-boo of PRICE.

It seemed as though I could never get cheap enough, and that the biggest problem of my business was to see how cheaply I could

produce the jobs that were delivered by my shop.

This condition was especially evident whenever I undertook to sell a furnace job. It seemed that advertisements of mail order houses had set a standard of prices which customers thought I ought to meet.

To make matters worse the other shops were up against the same problem and took the easiest way out—met this price.

Price haunted me—everybody seemed interested in price alone until after the delivery was made. Then came the awakening and my customers wondered why price articles didn't give good service.

At this time in my experience I realized that I must take a greater interest in my industry, myself, and my trade, and sell with bulldog tenacity for the greatest utility each job that I had occasion to figure.

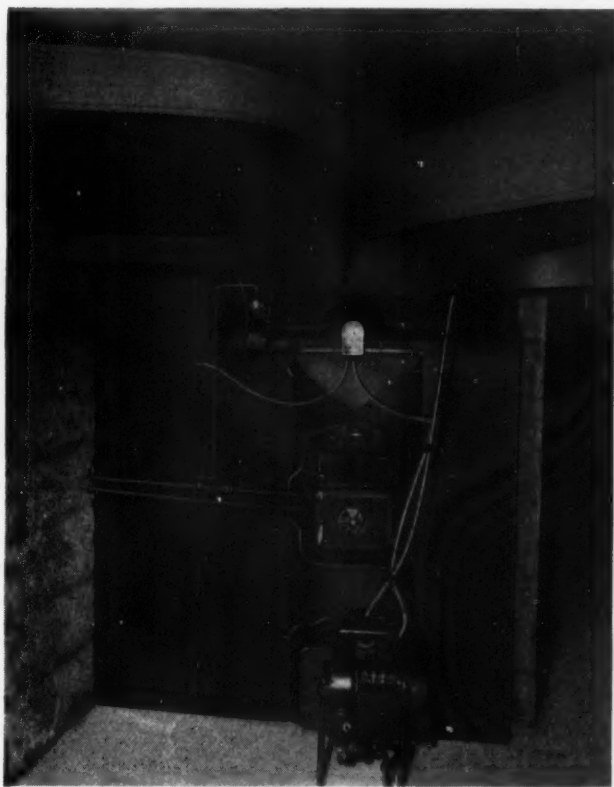
But the mere determination to

customer the highest type of heating system.

What I needed was a system which the owner could be proud of.

I began to plan. I sat down and put down on paper all the heating

I would sell a system which would give the home owner the right humidity. I would give him automatic control for convenience and economy. Wherever possible I determined to sell some form of



“This is one of the large homes in which I have installed a high priced heating system. The owner wanted automatic heat, automatic control and guaranteed satisfaction. He was not interested in price”

“This is the heating plant I installed. The heating unit is a square casing American Furnace Company unit with an oil burner attached. Control is full automatic

do a selling job was not the whole answer. I had to have something to sell that the mail order houses and competition couldn't duplicate. What I needed was a product that, rightly installed, guaranteed the

plants I was acquainted with. What did these plants offer the owner, I asked myself? To my surprise I found that practically every one offered just one thing—heat. Here was my answer.

automatic burner, such as an oil burner, so that the customer could look to me to supply the very highest type of heating equipment in my community. I would set myself up as a heating engineer and not be just another warm air furnace dealer.

I knew that I was not much of a salesman. I was a mechanic—a good one, yes—but not a salesman or a heating engineer.

This part of the task worried me. How could I make my ability over quickly? By co-operation with the engineering department of some manufacturer whereby I could take advantage of their experience.

So I changed my line so that I did have all these essential things.

My next problem was to arrange a sales program which would make it certain that I would present each selling argument most emphatically and not forget any one of them. To do this I determined to base each sale upon a plan all prepared to show the customer each feature of the system I proposed to install.

When a job came up I went out

and measured up the house. If it was a replacement job, I looked over the house, made a rough sketch showing the location of the present registers and grilles and marked down the parts of the system I thought ought to be discarded.

Most important, I got from the owner the entire list of faults he found in his system.

Up to this point no mention of my sale was made. I wasn't ready.

Then back to the shop where I prepared a good set of drawings showing the system and what was needed. This went to the engineering department along with all the notes I had taken from the owner.

If the job did not show any features which required more experience than mine, I prepared the plans myself. Heat losses were

▲  
"This is a smaller home, but the owner was just as much interested in my story of quality heating as was the owner of the large home"  
▼



ored heating system, which I guarantee will heat every room to the owner's satisfaction. I am selling as high a quality of merchandise as I can buy and it is being put in just as well as I know how.

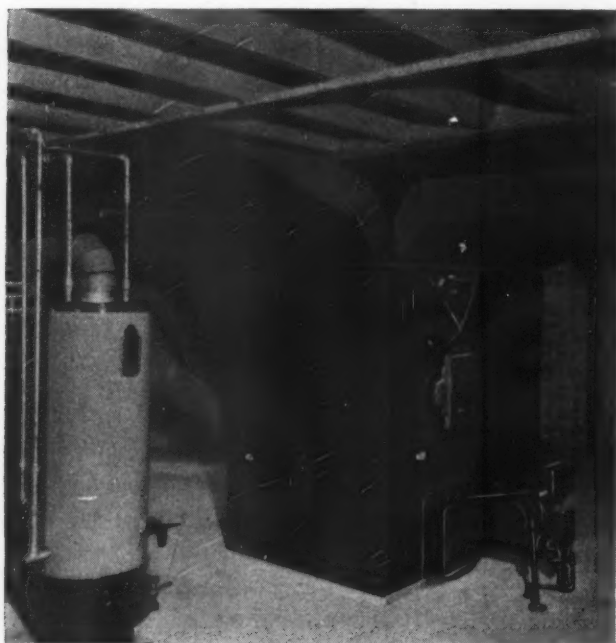
I am entitled to a good profit. There is nothing cheap about my

uary 1 we will occupy our new two-story building which has a floor space of 50 feet by 30 feet in the basement and each floor.

In addition to my sheet metal contracting business, I supply many of the sheet metal contractors in the surrounding territory with parts I manufacture, and my heating business has developed to the point where I sold a residence replacement job for \$1375, including the oil burner, a \$1200 job in a new residence, including the oil burner, and a job in a furniture store for \$2120.

Lindbergh didn't land safely in Paris because he was lucky. Byrd returned from the South Pole in spite of all hazards. Each feat was the result of carefully formulated plans that were capably executed.

The time is here right now when the problem I have settled to my satisfaction and profit must be solved by every warm air heating contractor who really wants to stay in business and make money.



▲  
"In the basement of his house I put this heating plant. It has the modern features provided by my manufacturer and which I am building my business on. Though price may mean more to this owner than to the other, I can sell engineered heating over my competitors who are still talking price"  
▼

carefully calculated, each room was gone over several times to check my figures. Against this set of figures the old system was checked and then the "bugs" of the owner were checked against my figures. If after this attention to detail, my figures showed that my plan would work, the final plans were drawn.

Then I was ready for the most important part of my new plan of operation.

I added my fair profit.

It is a good profit. I am giving my customers the benefit of a tail-

merchandise or about my service and if that is what the customer wants, then he should pay me a profit which will insure my remaining in business and rendering him satisfactory service.

I haven't had a complaint about this profit. It is a lot more profit than my competition is getting. But the people I sell want the best in heating and, like buying the best in cars, they are willing to pay for it.

Needless to say, my business shows a substantial growth, my shop is fully equipped, and on Jan-



▲  
"I also use modern design upstairs. Sidewall registers and baseboard returns are one of my selling points"  
▼



# METAL FOR PERMANENCE—TIN

▲  
The towers of the church of Saint John the Baptist, Pittsburgh, were tin covered 40 years ago. This roof is as sound today as then

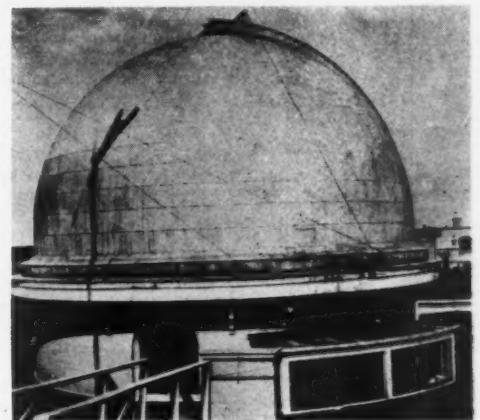


Iron is one of our oldest metals. Its use, as tin, on buildings dates back to the beginning of the sheet metal trade. That tin possesses to a high degree the qualities of long life are attested by the pictures on this page, which show a few of the more famous old tin roofs

▼  
Below: The City Hall, Louisville, Kentucky, is protected by a tin roof, laid in 1896. It is in perfect condition



▲  
Most everybody has heard of the Maxwell House, Nashville, Tenn. It was roofed with tin in 1850. The original roof is still in service

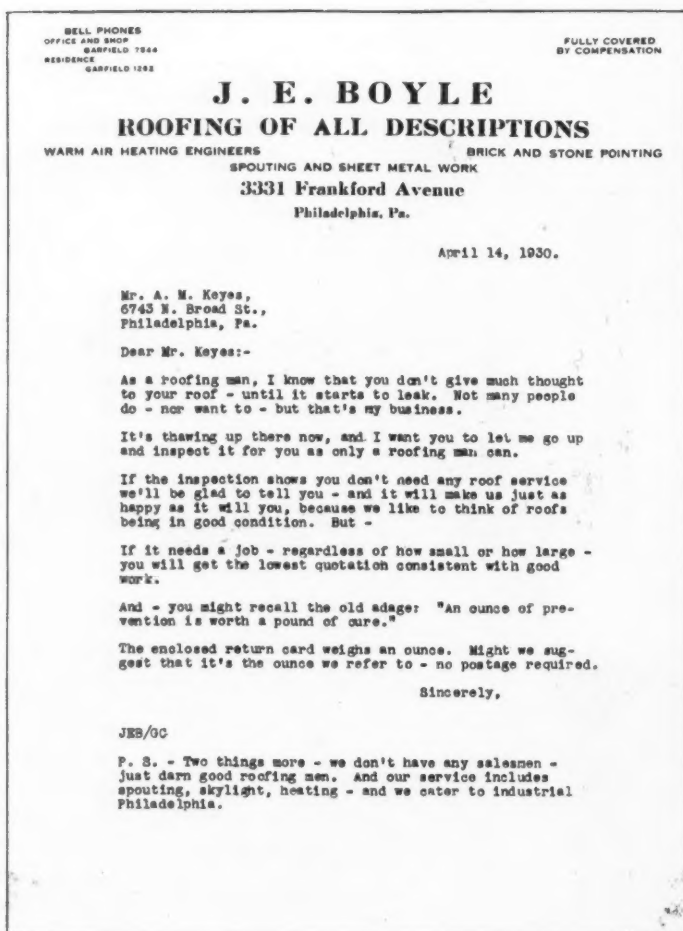


▲  
Montpelier, former home of James Madison in Virginia, has a tin roof which has been in service for fifty years

• This tin roof on the Observatory, University of Michigan, was laid in 1853



# This \$360 Direct Mail Campaign Sold \$1867 of New Business



But any solicitation through the mail must be studied and worked out to the smallest detail or the whole program is likely to fall flat.

This can be illustrated by the direct mail campaign recently worked up and used by J. E. Boyle, a Philadelphia heating, sheet metal and roofing contractor. The campaign will bear close study—first because the part which was handled rightly was a huge success and second because the balance of the campaign was undertaken too hastily and

Above is the first letter which brought back \$1867 of new business. Its appeal is direct to the home owner and it speaks from his interests and point of view

**D**IRECT mail advertising has come to be such a tremendous field of solicitation that the average home owner is deluged with mailing matter which he seldom reads and even less frequently takes advantage of.

Because of this attitude on the part of the public, the warm air heating and sheet metal contractor has fought shy of direct mail. As a matter of fact, however, direct mail is one of the most potent forces the contractor can call upon.



failed. From this story we can draw two lessons—one on how to succeed and one on how not to succeed.

This advertising campaign was built around solicitation for roofing and heating business—particularly repairing work and reroofing. As a second line of endeavor the contractor tried to work in some business for the warm air heating side of his operations and this fell down.

The basis of the campaign was a series of five letters. However, only three of the letters were used. The first two letters used told about roofing repair service. The third letter tried to get heating work.

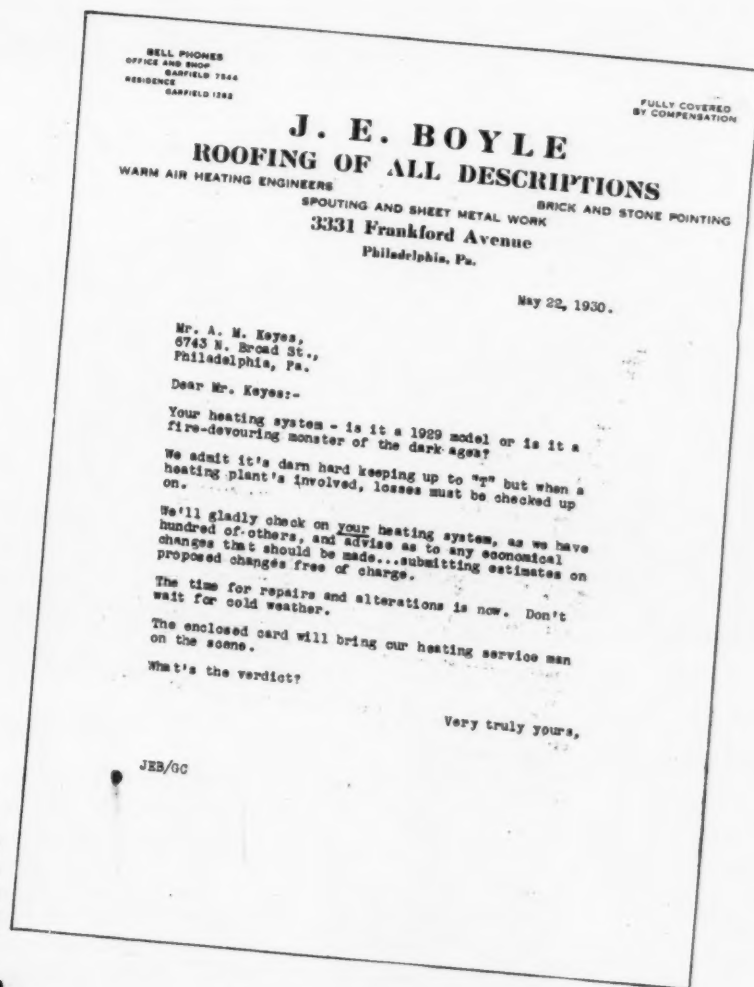


The first thing the contractor needed was a good mailing list. This list had to be confined to a radius within his field of service and also had to have good names. Such a list, consisting of 800 names was bought for \$10.00. While the names were of folks within his field of operations all the people on the list were unknown to the contractor.

This situation worked two ways.

First, the contractor knew nothing about the circumstances of the names and second the people the contractor proposed to appeal to did not know him, his shop, or his ability to do their work. The remarkable results obtained, therefore, can rightly be said to prove the potency of direct mail, well planned.

Mr. Boyle did not prepare the



This is the second letter. It brought back some replies, but no actual business. Its appeal is more general and it probably was mailed too soon after the first one to catch the at just the right time

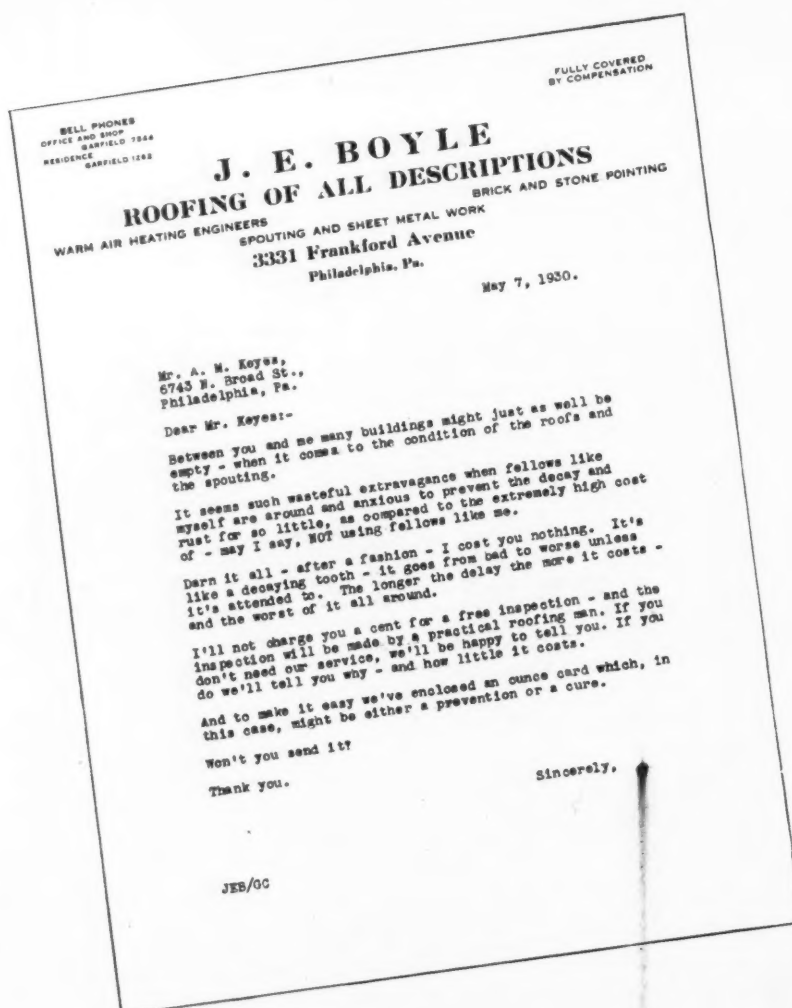
letters personally, but had them prepared by a direct mail firm. The contractor and the firm sat down and explained their respective problems and desires. From this conference the series was worked out. The letters cost 9 cents per letter including mailing and postage.

The whole program was mapped out early in the year. The first letter was to get roof repair work and was timed to reach the home owner right in the middle of the season when a bad roof is about the worst thing to have around the house—April.

The first letter was mailed to the 800 names. Just before mailing, contractor went over his entire organization, though his is a small shop, and got everything ready for work. Most important of all, since he was going to close the prospects personally, he rehearsed his sales arguments, got his prices lined up, and in general prepared for a fight.

From this first mailing of letters





In the third letter, the contractor tried to swing his appeal to heating. From the returns this seems to have failed, for there was no business and only one or two replies. In many respects this letter is really better than the second roofing letter. However, in direct mail so many things can go wrong that every contingency must be taken into account if success is to be assured

30 cards came back. Mr. Boyle got right on the job and called on the 30 home owners, personally. Each of the 30 roofs was inspected and needed repairs recommended. From the estimates of the repair cost 4 jobs were secured.

The total revenue from these 4 jobs was \$1867.00.

And perhaps as important, every dollar of this amount was collected promptly.

Approximately three weeks later the second letter was mailed to the same list. This letter did not have as personal an appeal as did the first and may have been mailed too close on the heels as the first one. At any rate only three cards were returned and no business was gotten from the three returns.

As Mr. Boyle analyzed this reduced return, the second letter was mailed too close behind the first, but a careful reading of the letter will show that whereas in the first

he appealed directly to the prospect in terms of the prospect's problem of the moment, the second letter is more general in its appeal and, furthermore, does not speak so intimately of the prospect's troubles as did the first.

The third letter of the series had an entirely different appeal. This letter was intended to solicit furnace repair and cleaning work. The mailing to the same 800 names was made about three weeks after the second roofing mailing.

This third letter did not bring in any inquiries.

The campaign can be analyzed to produce some interesting figures. The letters cost 9 cents each, including mailing cost. The first mailing of 800 letters then cost \$72.00. Thirty inquiries from 800 letters gives a percentage return of 3.7 per cent. From the 30 inquiries four jobs were secured. This is a 12 per cent return from the in-

quiries. Since these four jobs sold for \$1,867.00, we find that the cost of getting this work was 4 per cent of the cost of the total income from the mailing.

Any campaign which gets in 3.7 per cent return from direct mail solicitation can be called very favorable. Also a cost of only 4 per cent to get business can also be called a success.

Had the campaign ended, then, with the first mailing, the effort could have been called very successful. However, we must consider that the cost of the campaign really was \$360.00, even though two of the letters were not mailed and no return in actual money came from two of the mailings made.

Taking the cost of \$360.00 as the actual cost of the campaign we find that the contractor got \$1,867.00 of actual business from this expenditure. This would be a cost of 21 per cent.

This puts an entirely different light on the campaign, yet it does not mean that the cost was really excessive — providing — that these jobs brought their rightful profit.

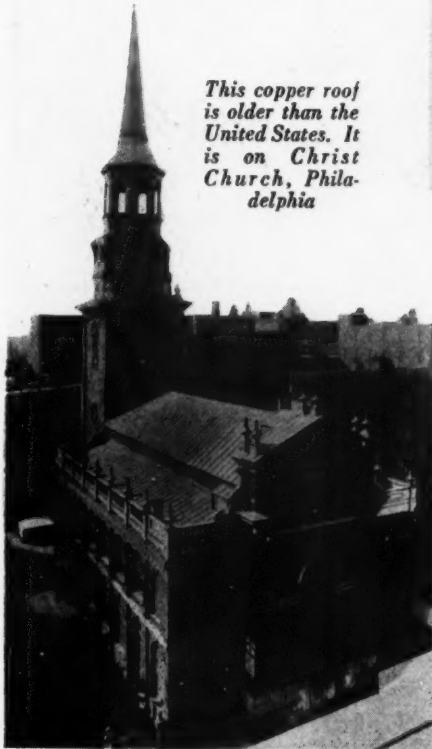
Had the same care been used for all the campaign, the results from the second and third mailing no doubt would have been much better. The campaign proved very instructive and as analyzed not costly.

# METAL FOR PERMANENCE—COPPER

*The dome of the State House, Boston, was first covered with copper by Paul Revere. In 1831 a new copper roof applied. This copper is still in place*



*This copper roof is older than the United States. It is on Christ Church, Philadelphia*



*The dome of St. Peters, Rome, is the largest dome in the world. It is covered with copper*

**Copper is one of the world's oldest metals. We know this because copper is one of the most enduring of metals and we are always finding still older copper articles. These pictures show some of the oldest examples of copper as a roofing material.**

*Trinity Church at Wall Street, New York, was sheathed with copper in 1846. It has never had ten cents maintenance*



*The dome of the National Capitol was covered with copper in 1800. It is in perfect condition today*





This house, priced at \$38,500, was sold this year in spite of the depression in real estate, solely because of the complete air conditioning system. The builder and the heating man worked out this sales appeal by co-operative thinking and planning

**D**URING the last two years, the speculative builder has found it hard to make a living. Folks are not only *not* building houses they are not *buying* them.

To offset this depression, the builder has turned his houses into veritable show rooms where the newest doo-dad and the most compelling eye attractor vie with modernistic architecture and decoration to attract the interest of the prospect. This attempt to compel attention is mainly responsible for the great show of colorful bathrooms, glistening fixtures, tricky furnishings and all the great parade of fanciful "needs" for modern housekeeping.

In Toledo, Ohio, one progressive warm air heating contractor has joined hands with an equally progressive speculative builder and worked out a plan which even during this year of fallen sales has enabled the builder to erect and SELL several houses, the cheapest of which sold for \$20,000. The highest price was well over \$50,000.



The secret of this allied success is an air conditioning heating system.

The heart of the system is a gas-fired warm air furnace, a blower and a washer all controlled automatically and the whole connected to a system of flat ducts and the latest patterns in registers and grilles.

The heating contractor who has developed this excellent business is the Schmidlin Brothers Company. The speculative builder is the D. A. Spitznaugle Company. The units used are Bryant furnaces, Silent Air blowers and washers.

This adoption of conditioned air as a selling appeal to the prospect willing and able to spend from 20,000 to \$50,000 did not come about as a matter of chance. As a matter

# The Home Cannot

of fact, these two contractors had been working together for several years—always giving the public the best in design and construction in the houses and the latest and best in heating.

The first co-operative installations were coal burning heating plants operating on gravity. Then forced air behind the coal furnace was introduced. Then natural gas came to Toledo and the demand for gas furnaces was met by a forced air, gas-fired installation which made the Spitznaugle houses much in demand. The ultimate in heating equipment as we know it today is the present arrangement with the automatically operating gas furnace, a blower and a washer.

It was only natural that this introduction of the gas furnace should



# Without Air Conditioning Long be Looked Upon as Modern

open up to the heating contractor another and even larger field among a class of home buyer which had heretofore held off from buying a warm air heating system under the impression that this system was obsolete. This is the home owner who buys or builds a home costing from \$20,000 on up.

By far the most interesting feature of this co-operative effort is the stress laid on air conditioning. It is this air conditioning which is appealing to the buyers of houses

and it is on this feature of the homes that the builder is placing the emphasis of his sales and advertising campaigns.

Some very interesting things have been discovered about home air conditioning. Dan Schmidlin, one of the brothers of the firm, explains the cooling and washing feature like this—

"This washer unit has made it possible to not only filter, purify and cleanse the air of any impurities, but has actually lowered the

temperature throughout the house on a hot summer day.

"The cooling effect of the washer unit depends, to a great extent, on the temperature of the water. On the particular house told about here we were handicapped during the extreme dry spell of last summer by water which tested approximately 86 degrees Fahrenheit. With the additional help of the cooler basement and the air drawn through the duct under the library floor, we were able to discharge the air at a lower temperature. It was our original plan to cool only the library on the first floor. That was the reason for originally planning the cold air underground duct and discharging the air at the ceiling in this room as shown on plans.

"After this system was in operation, we found we were able to discharge a large volume of cool air at every register connected to the furnace. To our surprise we found that the cost of operating this washer unit was practically nothing.

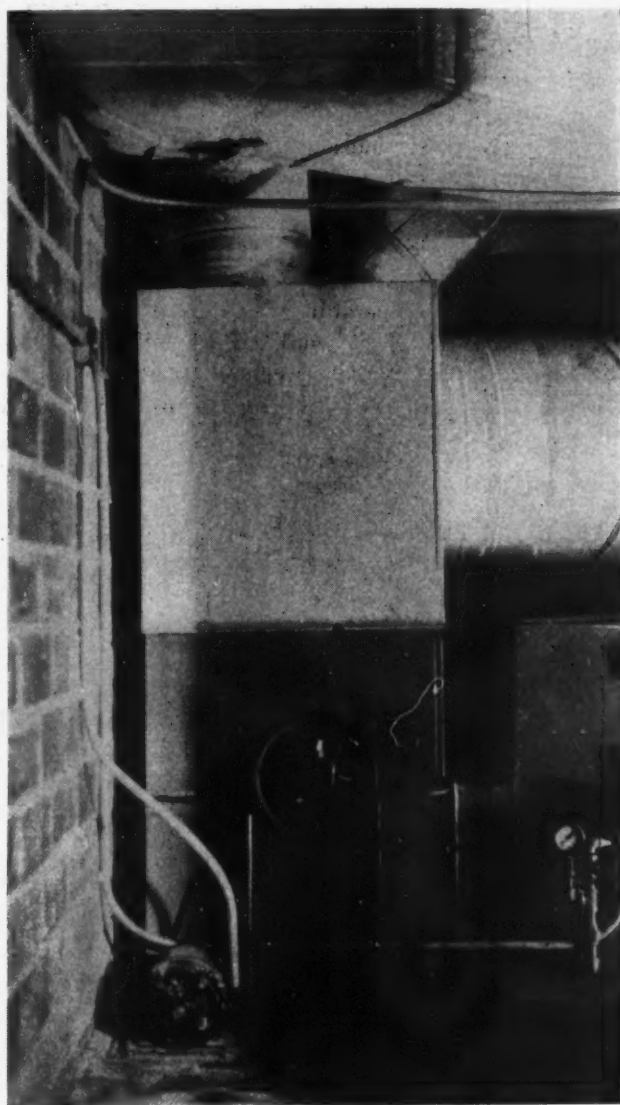
"Generally speaking, washed operation in Toledo costs about this—For cooling purposes, using a twelve-pound water pressure cost of operation was \$1 for 208 hours.

"For heating and humidifying, using a twenty-five pound pressure, cost of operation was \$1 for 135 hours.

"The above prices are based on the following: at a twelve-pound pressure this unit will consume thirty-six gallons of water per hour. Seven and one-half gallons of water to one cubic foot or 4.8 cubic feet of water consumed each hour. Rate prevailing at this time is \$1 for 1,000 cubic feet or 208 hours for \$1.

"For heating and humidifying, at a twenty-five pound pressure, this

Here is the blower and washer used in the house on the opposite page. In 100-degree weather this past summer the interior temperature was dropped several degrees and a complete circulation of air set up. The buyers were astounded at the comfort secured





new home under construction before the home is plastered. This assures a slow drying process and prevents plaster from cracking. The same thing is true of the interior finish. Wood work, built in features such as cabinets, etc., will not warp or buckle, nor will the hardwood floors if the washer is allowed to run during the process of construction.

"In our estimation, in the very near future a large percentage of homes built for sale, costing more than \$20,000, can be sold on the

built and sold some really wonderful homes. The photographs and plans show a typical house. This one sold for \$38,500. Throughout the entire house every detail of construction and equipment is in keeping with the sales price of the house. Only the best of material and the best of design and construction are included.

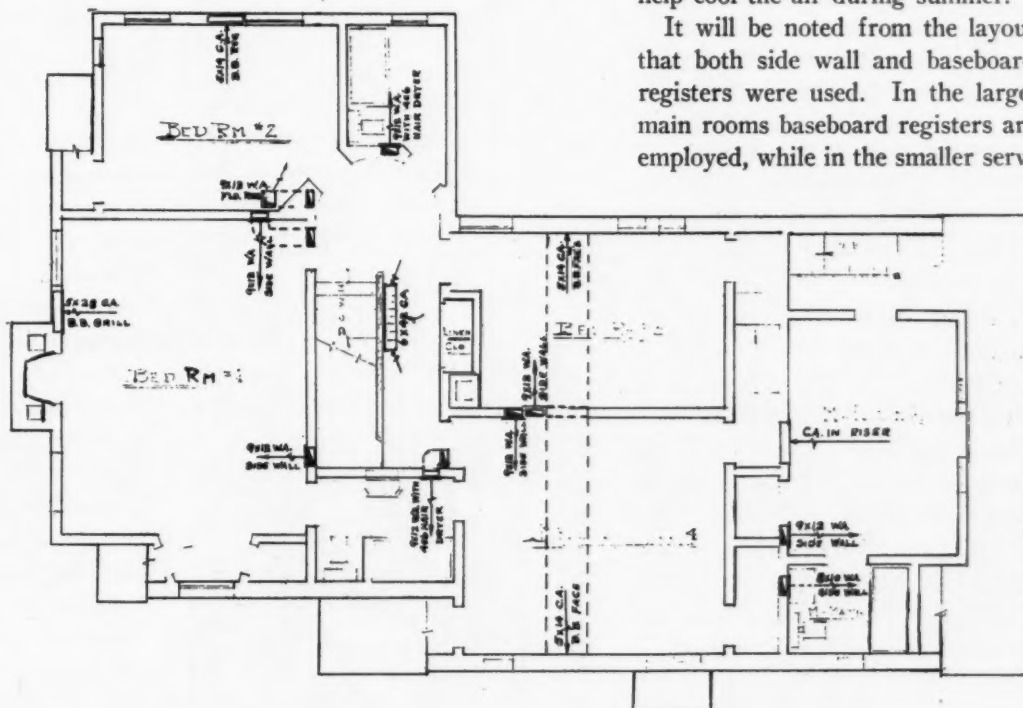
In this house the first floors are all of concrete slab on steel joists. The lower side of the trusses are not plastered in and the ducts were run between the steel joists where

There is nothing unusual in the heating system for the first floor, with the exception of the library, which is over an unexcavated section of basement. The runs for this room are taken up to the ceiling level through wall stacks and then carried across the small hall ceiling and open into the library through a ceiling register. The same construction is followed in heating the adjoining lavatory.

The return air from the library is carried through a special duct. It was intended to use this duct to help cool the air during summer.

It will be noted from the layout that both side wall and baseboard registers were used. In the large, main rooms baseboard registers are employed, while in the smaller serv-

The most interesting feature of the second floor layout is the plan for getting return air out of the two central bedrooms. Notice how this has worked out. Each bathroom has a combination register and hair dryer installed



idea of warm air heating and air conditioning.

"Warm air heating contractors need only to prove to the architect and builder that the system is mechanically reliable and efficient and jobs will be forthcoming in great numbers. Confidence has been lacking and certainly the warm air furnace man, too often known as the 'Hot Air Furnace Man,' needs only blame himself. Unless the warm air furnace man wakes up and realizes the possibilities in air conditioning, I sincerely believe he will be replaced by a merchandiser from other lines of business who has seen that the industry has been revolutionized."

The Spitznaugle company has

ever possible.

The layout of the heating system through the basement shows a compact arrangement of ducts, in which main truck lines, split into branches are used to reduce the number of leads through the basement. In the system four trunks are employed, three of them being large with several branches and the fourth a small run for the garage.

The basement recreation room is heated through a lead from one of the main trunks. The air is introduced at the breathing line near one end of the room and return air is taken out at a point about the middle of the inside wall. The rest of the basement is heated from the furnace and the ducts.

ice rooms side wall registers are used. Just which type was to be used depended upon the purpose of the room and the furnishings.

The most unusual feature of the second floor layout is the method used to get the return air out of the two central bedrooms. To conserve space and duct runs in the basement, return air grilles were placed in the baseboard on the outside walls. A duct then carried the air across under the bedroom floor to the central and common partition. Here both ducts dumped into a stack which ran down the partition of the first floor and connected into the two ducts which bring air from the dining room and kitchen on the first floor.



# CONTROL CREDIT

**T**WO years ago, namely, November 1, 1928, the construction industry of Detroit set out on an economic venture which was unique in the annals of commercial activity. This experiment consisted of banding together many of the different trade groups of construction for the purpose of bringing sanity into industry credit procedure.

The name of this organization is the Allied Construction Industries of Detroit. Since this original organization was set up, many other cities have investigated the organization and have adopted its plans.

The far-reaching influences of this institution and resultant publicity in construction circles has created a credit consciousness on the part of the entire industry of the country. Regardless of personal opinions as expressed by some delinquents regarding the Allied Construction Industries, there is a complete realization on all sides that credit is not an inherent right of any firm or individual operating or desiring to operate in some section of this country.

Credit is now recognized as a privilege that must be merited by continuous good payment behavior and a degree of financial responsibility.

Credit is now appreciated as a commercial convenience, not a non-interest bearing loan of unlimited duration in the form of goods or services.

Credit malpractice, careless extension of credit or loose credit as it is commonly called, is at once the most costly, most prevalent and least understood malady of the commercial world. It is the cancer of business and, like its prototype in medicine, is insidiously eating out the vitals of business.

Our members have come to realize that loose credit:

(a) Invites underfinanced and incompetent operators.

(b) Perpetuates these undesirables in business.

(c) Overcrowds industry.

(d) Puts premium on questionable practices.

(e) Lowers all standards, including workmanship and materials.

(f) Creates destructive competition.

(g) Increases losses.

(h) Saddles all losses upon responsible operators.

A current catch phrase is that every one is entitled to a chance in the business world which, of course, is true if he accepts all of the risks and does not leave his errors to be paid for by others.

Paying a premium or being penalized in order to subsidize incompetent operators is something to

**And You Place a Check On Incompetence, Overcrowding, Poor Workmanship, Underbidding and Cut-Throat Competition.** ~ ~ ~

**By N. J. BIDDLE**

*General Manager, Allied Construction Industries*

surely has been most effective in putting a stop to the pyramiding of accounts.

Pyramiding of accounts has made it possible in the past for irresponsible or unscrupulous operators to continue business indefinitely, becoming more deeply involved all the while.

There are several perfectly sound reasons for an individual operator refusing to extend additional credit to a firm which has failed to properly meet its obligations.

First, the firm who does not pay its other creditors is not likely to treat your concern any better and surely is not a good credit risk.

Second, selling a delinquent is in actual effect granting him better terms than the prompt paying customer enjoys and is manifestly unfair.

Third, in selling delinquents, the dealer is placing unqualified competition in the field against his legitimate customers thereby undermining the business of these good material outlets.

Continuing to sell delinquents is in effect placing a financial penalty upon the competent operator in order to subsidize the incompetent.

The complete elimination of credit abuses cannot be brought about in a short period of time. Industry habits acquired through generations and in a period when business was less complex than at



**Lists of delinquent customers are sent out to all members. Any order can be checked against this list and additional information gotten by telephone if necessary. This service saves money losses**

which every individual in all purchasing groups strenuously objects.

Collecting from and sending out to our members current, dependable credit information is the manner in which we attack the problem of curbing credit malpractice. This

present cannot be changed over night.

How this establishment of credit works may best be explained by relating how the construction industry of Detroit has worked out its problems and put credit on a sound financial basis. What has been done in Detroit can, of course, be done in any other community.

Outside of the necessary organization work, most of our effort has been directed toward credit stabilization. The method of approach has been to have each affiliating group establish a delinquency date or time up to which accounts are considered current and beyond which, they are delinquent.

Securing the establishment of delinquency dates in the member groups is creating standards and is a worth while effort. The more substantial elements in the industry welcome the establishment of standards and naturally adhere to them.

The Allied Construction Industries undoubtedly has the most complete and accurate file concerning questionable accounts of any agency serving the industry. These files are constantly being augmented and already contain many thousands of names.

The following rules are self-explanatory:

Rule 1. A complete list of all accounts becoming delinquent under the standard terms of your group must be sent into our office not later than the second day of each month.

Rule 2. Payments received on delinquent accounts must be immediately reported to our office so that the account may be cleared.

Rule 3. Each open account sale to a delinquent must be immediately reported to the office for the information of our members.

These are the essential rules and provide for a constant influx of current credit information.

Reciprocal arrangements are being made with other agencies from time to time, thereby extending our range of information.

The Allied Construction Industries Credit Bulletin is undoubtedly the most effective instrument for the improvement of credit conditions ever designed. It is a complete interlocking monthly interchange of adverse credit information collected from many trade groups. The monthly lists of delinquent accounts sent in by the members are consolidated in the credit bulletin together with other pertinent information.

Full use of this service is the most effective curb on illicit credit practices. Listing not only gives the creditor a large measure of protection but also forewarns other possible sources of supply so that they may adequately protect themselves.

Each month a letter of notifica-



Permitting the incompetent to remain in business is in reality subsidizing the incompetent with money taken from the competent dealer. This is one of the greatest evils of credit

tion is sent out to firms reported delinquent so that they may have advance notice. This gives such firms an opportunity to settle the account before being listed or to establish a claim of dispute, in which case the account is not listed at all. Our institution is in no sense a collection agency but one of the most beneficial by-products of our effort is the acceleration of payments.

No business man wants a mark against his credit record and, con-

sequently, will settle his accounts, if possible, before being listed.

Credit reports are free to members unless it becomes necessary to secure same from some agency with which we have no reciprocal agreement, in which case, a nominal charge is made. Increasing use is being made of this service and has resulted in saving many thousands of dollars to our members. There can be no more effective insurance against loss. Any member not taking advantage of such valuable information as this is neglecting a real opportunity. Services are like our muscles, growing stronger with exercise.

Why fight? In every fight, both sides lose. Breaches occur which are sometimes never cured. They often react to the embarrassment of one or more groups, the members of which should work in the closest harmony, having many common problems.

Arbitration provides the most sensible method of handling disputes and largely precludes the aftermath of hate. Arbitration is the most economical, speedy and practical method of settling disputes. The arbitration service of the Allied Construction Industries is an ideal medium for settling differences of opinion without prolonged or delayed court procedure.

To date our efforts at arbitration have returned more money to creditors than the entire cost of operating the organization during its lifetime. This, too, is a public service, saving the taxpayers money and not cluttering up the courts with a lot of needless work.

One of the most potent factors in retarding progress in our industry has been the apparent opposition of interests on the part of various trade groups. Many of these different divisions have been working at cross-purposes for an indefinite period, the activity of one group diametrically opposing the effort of another. No progress can be made in this manner.

Common sense dictates that since we are all part of one industry, our

real interests are exactly the same.

The Allied Construction Industries does not in any way circumscribe the activities or freedom of any group. Each group retains its own individuality, has complete autonomy and makes the credit rules under which they operate in their affiliation with our organization.

In setting up the Allied Construction Industries, consideration was given both to the handicap under which the single trade association has always had to work and also to their real accomplishment in the development of organization technique and constructive effort.

We believe our organization setup, membership by group affiliation, is the proper one and it has worked out very well except in the case of those units which were poorly organized or unwilling to

put forth a sufficient amount of effort in their own behalf.

Periods of reduced volume bring problems for even those firms of unquestioned financial stability. Much more seriously does it affect that far larger number whose capital is very limited or entirely too small. Unfortunately there are many in this category. They are confronted by the problem of remaining in business somehow until there is some business available. The natural tendency under pressure is to grab at anything that looks like an order in the hope of securing some cash to apply on past due accounts. Many of these firms are good operators under normal conditions and an asset to construction.

Manifestly we would not be giving full credit service, if we failed to accept this responsibility.

We have undertaken this Adjustment Service for the purpose of assisting solvent but embarrassed firms to weather the storm and for the orderly liquidation of such firms as are insolvent. Our Adjustment Service offers the most practical and economical method in straightening out financial relationships while giving the maximum protection to both creditor and debtor.

Credit abuse is the underlying cause of most of our troubles.

Purchasers who buy on price alone, giving no thought to the policies of their suppliers, are foolishly generous for they are indirectly contributing to the support of their irresponsible competitors. Good judgment dictates that you should ascertain the policies of a supplier, both as expressed and practiced, before giving patronage.



## This 25-Year Old Brick Set Is Still Serving Faithfully

**This brick set furnace was installed in 1905 in a large house in Philadelphia. The furnace was installed by A. B. Bennett and Company, 1632 Thompson Street.**

**The house has eleven rooms and one bath. All the rooms are large, making the heat loss for the building quite high.**

**The furnace is composed of six No. 20 gauge sheet iron drums hooked into the firing chamber.**

**The owner of the house says that in spite of every variation and even in the most severe weather his house has always been warm and comfortable throughout.**



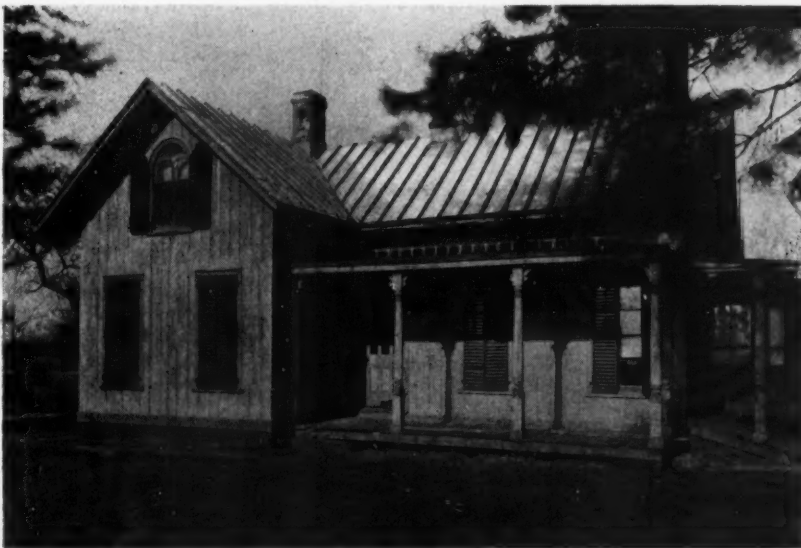
## METAL FOR PERMANENCE—ZINC

Zinc is one of the oldest metals used for roofing and trim. It is one of the most widely used metals in Europe, where dozens of the world's famous buildings are roofed with zinc. Paris, for example, is said to be roofed with zinc.

Zinc was first rolled in this country about 1850, and this in a small way. Today, practically every sheet metal contractor has worked in this metal and its uses have increased manifold.



*The Reeve House, Jamesport, N. Y., is one of the historic old houses of the East. The zinc roof is 65 years old and is in perfect condition. The construction is much similar to the way we lay zinc today*



*Just a few years ago there was torn down one of the oldest houses on Staten Island, New York. For 77 years the house has been protected by a zinc roof. When demolished, the zinc was found in perfect condition. Although exposed to sea air, the zinc retained all its original toughness and brought considerable as scrap*

*The Santa Clara County Court House was built at the close of the Civil War. When the building was erected a zinc roof was specified to insure long life. Today this original zinc roof is 64 years old. This roof went through the San Francisco earthquake with only the separation of a few seams. In the last 18 years maintenance has been \$80 and this was due to two accidents not at all the fault of the roof*



# What Are You Doing WINDOW



## Does Your Window

In selecting a site for their business the Munkel-Rippel Heating Co. evidently gave careful consideration to its advantages from a display standpoint. This store front says "come in" in unmistakable language

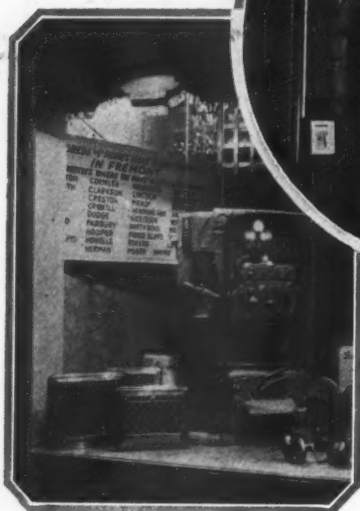
**N**O matter where your shop is located or what kind of a shop front you may have, there are many things you can do to improve it and to put it profitably to work for you. When you consider the potential advertising value your shop frontage possesses

—the countless number of people who pass it each day—you cannot help but come to the conclusion that something should be done about it. You have a tremendous asset that is going entirely to waste, otherwise.

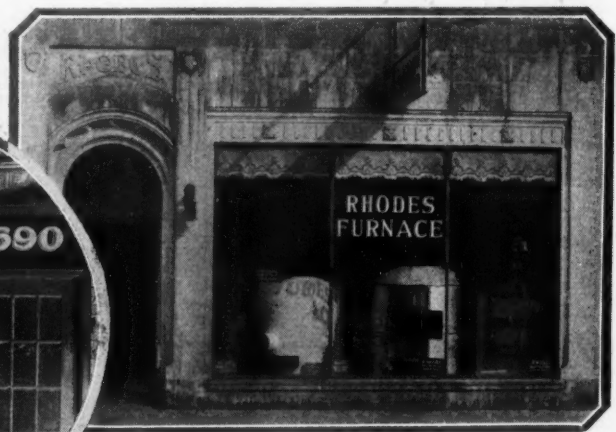
Retail establishments in general devote a great deal of attention and

money to their window displays, for it is the most effective means of literally pulling people into the store. Store locations are therefore selected not so much with reference to their accessibility and convenience as with reference to the number of people who pass them each day.

In this window of the City Heating Co., the furnace and registers are grouped to present a pleasing picture and afford an unobstructed view of the attractive interior



The furnace end of a hardware window display in which a sign lists surrounding towns in which this dealer has installed furnaces



Potted plants and vines help to give this window a pleasing atmosphere. Neatly lettered placards provide the sales appeal

Rental values are determined largely on this basis.

Much of the selling of the warm air heating and sheet metal contractor is done on the customers' premises which may lead some to the conclusion that there is no need

# About Your DISPLAYS?

Say, "Come in"?

In the attractive display room of the Elite Sheet Metal Works no opportunity is overlooked to display the heating accessories which help to sell warm air heating



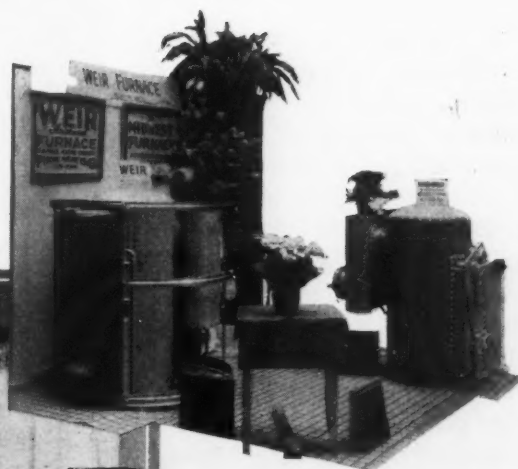
for an attractive sales room and window display. There is little that can be said along this line about the warm air furnace dealer that is not equally true in other branches of the home appliance business, where constant and aggressive canvassing is the rule. Yet the most successful merchandisers in these fields have well located sales rooms when possible and do everything possible to display their products to the best possible advantage to attract the casual passer-by who looks because he is curious, who comes in because he is interested and who buys because he is sold by the convincing array of demonstrating materials on the sales floor.

No, furnaces are not sold on their good looks, but neither are most other household conveniences and necessities which can be mentioned, and a well constructed furnace, not



Easy chair, table and reading lamp—even a radio—give this office a home-like atmosphere which encourages customers to come in and talk about their heating problems

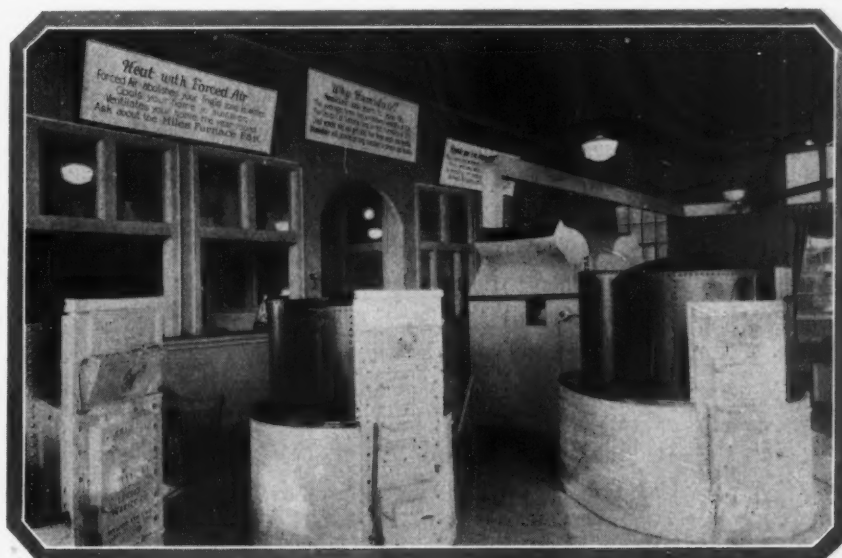
to mention a well designed heating system, certainly has features which have to be seen to be appreciated



This Moline dealer's display at a household show is an example of a pleasing surrounding for displaying cold steel. A similar display could be arranged on any office floor

and desired, nor do we have to go out of the warm air furnace field for demonstrable proof of the fact that a well arranged window and sales room are decided assets in selling warm air heating equipment.

There are many things to consider in connection with the subject of window display, not the least of which is location. Not many dealers in our field have reached the



The pleasing window having beckoned the prospect inside, this is what the Munkel-Rippel Heating Co. has provided to help convince him. The signs tell about uniform temperature and the need for moist air



Placards help to provide a selling punch in this effective display and pull customers into the salesroom



point where they can select the best possible location for their purpose, nor would such a course be recommended. Yet a study of the display advantages of locations which are available at a reasonable rental value should prove valuable. On which side of the street, for instance, do most of the people pass? How does the number of people which passes one location compare with the number which passes another place which is available at the same price? What class of people are they? Do they own their homes? These are important points to consider in selecting a shop location, and which should be considered by dealers whose present shop locations are a handicap.

In this article, however, we are chiefly concerned with the problem of what to do with existing windows and how to arrange them to the best possible advantage without any major cash outlay. When the purposes and the importance of window display are well understood in the light of their reflecting the spirit and the policy of the business, it will be perfectly apparent that there is one important step that any dealer can, should and must make. If he will keep his shop neat and clean, inside and out so that it will be a credit to the neighborhood in which it is located, rather than a discredit, it at least won't advertise him unfavorably. At least he can keep the window clean so that people can see what is going on inside.

A well known window display authority in the retail clothing field defines the purposes of window display as follows:

1. To sell merchandise directly or indirectly.
2. To advertise the business.
3. To reflect the policy of the business and the quality of its merchandise.
4. To educate people in the proper selection of food,

dress and living comforts.

5. To present the merchandise of the store in the windows, in a timely and effective manner, so as to cause people to notice, study and desire to buy the things displayed.

A mere glance at the views of window and sales room displays which accompany this article will convince the reader that these displays certainly do represent the businesses of these dealers in a favorable light. They suggest that these dealers are proud of the business in which they are engaged, and the merchandise itself is presented in a favorable light. It is not enough, however, to merely group furnaces and heating accessories in a window and depend upon them to tell their own story. A good display should, if possible be built around an *idea*. The same authority we quoted before puts it well when he says that "a window with a good idea, but poorly executed, is better than one that is 'beautiful but dumb'." The windows which are shown with this article are appealing because of the manner in which the furnaces and accessories are grouped, so that the whole arrangement presents a picture and yet the details or parts of the picture are interesting, too.

Many an attractive display fails to some extent in its purpose of selling merchandise (and this fault is apparent in some of the windows presented here) because they fail to appeal to fundamental buying in-

stincts. What makes people want to buy the things displayed in your window? What will make them come in and ask questions about them? The desire for shelter and comfort, to which you are catering, is one of the most vital concerns of man, yet the comfort provided by a heating system of your design is not an easy thing to *picture* in your window display. The degree of the success of your windows, however, depends upon your ability to do that very thing.

In the sales room display of the Munkel-Rippel Heating Co., Columbus, Ohio, shown on page 81 attractively lettered signs carry the needed selling suggestion by telling how and why forced air circulation provides for even distribution of heat and eliminates the frigid zone. Another explains the need for humidity. More and more, manufacturers are providing attractive display material which provides this needed selling punch. The window of Warnkey and Son, West Bend, Wisconsin, on page 83, shows how such material can be put to effective use and provides an additional selling punch by showing photographs of homes in this dealer's community which are heated by furnaces of the make installed by him.

Placards neatly lettered and placed near the items to which they refer can be made to convey the needed selling suggestion thus changing the articles displayed from mere objects of interest to objects of genuine value which the prospect *is made to want*.

This window, as well as the



Warnkey & Son make effective use of their manufacturers' display material. The small pictures show homes heated with the make of furnace this dealer installs

splendid interior displays shown, takes into consideration the important principle that *sales appeal* have no display platforms, which is not a serious objection if the interior is pleasing and easy to see *depends largely upon the atmosphere which surrounds the merchandise*. This is probably the most important point to be considered in the particular field in which we are interested. Some dealers' windows through the window. Some, too, have little or no office space and in some cases there is no dividing partition between the office and the noisy shop, which is, indeed, a serious objection. There is no shop so busy but that a portion at the front cannot be partitioned off to provide a suitable place to display a furnace and the many accessories which add so greatly to the public interest in warm air heating, and above all, to provide a suitable place in which to talk to the customers you are able to get into their places of business.

Another item of importance is that of lighting. If your shop is

any way near the paths to the night life of your community, it will certainly pay you to flood your window or display room with light during the hours when people are on the streets. If you are on the wrong side of the street or a bit off the beaten path a light may be the means of focusing attention upon your window which it would miss otherwise. At night, too, when people are relaxing, is a good time to get them interested in the particular things you have to sell. You can purchase or make, yourself, a device for automatically turning off the light when there is no longer need for it. At night, too, there is great opportunity for doing something original with your window, using artificial lighting effects to represent fire in the furnace.

Once you have become interested in doing things about your window displays, there will be no end of ideas that will occur to you, but as in many other things, the important thing is to make the start. If you still find that you have no time for it or no ideas as to how to go about it, turn this particular task over to one of the boys in the office. Give him some time off to go around and study good window displays and to talk to the men who arrange them. Then let him spend a little money (he won't need much) and you will be surprised at the attractive effects he will produce if he will keep in mind the three cardinal points of any form of advertising: (1) to attract attention, (2) to create and maintain interest, and (3) to convey a selling suggestion that makes the prospect want what is displayed.

A display on wheels. The Zanmiller Sheet Metal Shop not only uses its window for prospect stoppers but goes out and drags them in with this interesting traveling display



# BUILDING BUSINESS

## with SALES LETTERS

By J. R. HANNON

*Circulation Manager, American Artisan*

**R**ECENTLY I called on some contractors to get some data on the business they were securing through sales letters but, to my surprise, I met with very little success. "Why," I said to myself, "is so little attention given to the wonderful business possibilities and the good-will building opportunities offered by sales letters?"

The answer seems to be that little attention is paid to this subject—probably because of a lack of knowledge of what can be accomplished by this silent salesman or little knowledge of certain fundamental principles necessary to the construction of a successful letter.

It is true that many contractors are making good use of this form of advertising but it is likewise true that far too many of their letters fall flat.

The trouble is often due to the fact that the contractor depends upon one lengthy letter instead of a series of short ones.

Again, it will be found that little attention is paid to limiting paragraphs to one thought or argument.

There are numerous other reasons why letters often fail to accomplish the desired result, and **AMERICAN ARTISAN** hopes through this and following articles to correct some of the evils that now confront contractors along this particular line.

There's an old saying—"Doing business without advertising is like winking at a pretty girl in the dark. You know what you are doing but she doesn't."

You know the sheet metal business, but regardless of how well you do your work, business won't always come into your shop unless

**Sales letters are a quick, cheap and effective way to get your message to the prospect. But such letters are useless unless you have something the public wants and tell them about it in terms that get and hold their attention**

you do some sort of advertising. There are many forms of advertising a business but the most widely used is the sales letter. Practically every form of advertising has a follow-up in the form of the sales letter. It is a most effective weapon not only for securing immediate business, but for building up both good-will and prestige.

One of the first things you must do, of course, is to compile a good prospect list. And where is the contractor that cannot find plenty of prospects for the various lines of work or jobs he can do? Imagine for a moment the many residences, industrial plants and commercial buildings which sometime or other need new gutters, spoutings, ventilators, skylights, new furnace or an old one overhauled, or a new roof.

When the owners of these buildings are in the market for work of this kind will they think of you or your shop? Have you done anything to let them know that you specialize in work of this kind or will they have to make inquiries and then perhaps give the job to an aggressive competitor or some con-

cern located farther away from the prospect than you are? I mention these things only because they comprise some of the factors that you might control were you to at least occasionally use some form of advertising that would keep your business in the limelight.

Now to get down to the actual writing of sales letters. One should try and analyze the needs or wants of the buyer. Try and picture in your mind how your prospect can use and benefit from what you offer. *There is little use in making an appeal to reason unless the appeal also fills a need or want.* It should be an easy matter for you to determine what the needs or wants of your prospects are. Why did you overhaul or install a new furnace in Smith's home? What makes people buy new roofs? What were the reasons for getting the last ten jobs on skylights or ventilation? If you analyze the reasons why you got these jobs you will no doubt find out the "needs" of your prospects and build these "needs" into talking points or selling appeals. In preparing your sales letters think of what you can give or do that will give your prospect better service, more comfort, protection, etc. Choose an appeal to some human desire that will actuate the prospect to buy. Some of these human desires that you will want to keep in mind are:

**Protection**—to protect family or building.

**Safety in buying**—product or work guaranteed.

**Cleanliness**—proper installations—canopies, furnaces, etc.

**Possession**—Ownership—New Products—furnaces, fans, drain boards, etc.

When you have struck upon some human desire to appeal to, you should then proceed to show how your service or product fulfills that desire, keeping in mind that the real basis of any sale is the satis-



faction, the use or the gain provided. You can stress such factors as efficiency, economy, saving of time and money, convenience, value in terms of price, etc.

The same fundamental principles that apply to successful salesmanship are likewise applicable to sales letters. In planning a letter or series of sales efforts in the form of letters, it is always well to keep in mind these fundamental principles which may be classed as follows:

1—Attract Attention.

2—Arouse Interest.

3—Create Desire.

4—Stimulate Action.

Each one of these elements

ing—one by experience and the other by learning from those who know."

Then there is the question method, and examples of this are shown:

"Do you know that a new 'Save-more Heat Regulator' installed on your furnace will pay for itself before the winter season ends?"

"Do you know that the new skylight installed on the Jones Building has reduced their light bill over \$100.00 this year?"

The strong statement or assertive type of opening is sometimes accomplished like this—

"Your furnace is wasting fuel and fuel costs money!"

"Don't blame your furnace be-

using this form. Every effort should be made to arrange the question paragraph in such a way that the reader asks himself whether the point brought out applies to him. If it strikes the reader in this manner, he invariably will want to know more.

The "strong assertion" type of opening is rather difficult to handle and will fall flat unless followed up with sufficient evidence that will leave the reader in a receptive mood. On the other hand, there is probably no other form of opening that has more strength or force to make the reader pay quick attention to what you claim, than this method of opening.

A glance over the opening paragraphs illustrated in the three preceding examples will show much use of the words "you" and "your."

There's a reason; in fact, this "you" element must never be lost sight of in planning a sales letter because any letter which is to act as a personal message must, from the very beginning, be addressed directly to the reader. Of course, one must use a reasonable amount of judgment in preparing the entire letter and it must be remembered that there are limits to the use of the "you" element, even though it be the most important element in sales letters.

Don't ever start a sales letter with any time-worn phrase, such as "You will be interested in knowing that we carry the largest stock, etc." or "We desire to call your attention to, etc."

Such statements are not of material interest to the reader. What he wants to know is WHAT BENEFIT HE WILL DERIVE FROM WHAT YOU HAVE TO OFFER, rather than listen to you "blow your own horn." Few men care to listen to another's story about his business, its earnings, its wonderful growth, etc., unless they ask for it.

A better plan is to talk about your customer's problems. This is why the "you" element is such an

(Continued on page 131)

Franklin 1122
Established 1890
Estimates Promptly Furnished

## JOHN N. JACKSON

Tile, Slate, Metal and Composition Roofing

Architectural Galvanized Iron Work and Metal Ceiling

WARM AIR FURNACES

Tunners Made to Order      479 NORTH BROADWAY      Repairing Promptly Done

Dear Sir:-

There's quite a difference between the man who fires a locomotive and the man who tends to the house furnace, but you'll admit that both have similar work to perform.

Before every "run" the locomotive engineer gives his engine a careful "going over". He sees that everything is in perfect shape for smooth and safe driving. This should also hold true of the man who tends his own furnace, but how many house owners give their furnaces the careful attention the engineer gives his engine?

Right now, most furnaces need a careful "going over", because they're going to be kept in constant service throughout a long winter season.

Certain things must be done to keep your furnace in perfect running condition if it's going to give good service this winter: the grates may need attention; different fuel may be necessary; a good heat regulator may save you time, trouble and money.

We now have an ample stock of parts and equipment that, from a service and economy standpoint, should warrant a call from you and regardless of whether we perform these services for you, our visit won't obligate you in any way. We'll be glad to inspect your furnace for you without charge in order that you may determine for yourself whether or not you need our service.

Yours very truly,

Here is a letter which talks right to the prospect in terms of things he can't help but be interested in. The most important part of the letter is the beginning. If he reads that far, he probably will finish. Make the beginning strong and personal

should follow in logical sequence.

The first thing the letter must do is—attract attention.

There are three good methods of doing this. First, by a statement of an interesting fact. Second, by asking a question. Third, by a strong statement or assertion. The following is an example of the statement of fact opening:

"There is one right way of doing anything and a million wrong ways. There are two right ways of learn-

cause you are getting less heat—perhaps you are as much at fault as it is."

The opening sentence or the very first paragraph in a sales letter often makes or breaks the entire letter. It is here that you must touch somebody's interest and feeling. If you hope to do this, your message should be simple and sincere. The question method of opening has been greatly overworked and great care should be taken in

# MERCHANDISING ALMANAC



## A Business-Building Idea for Every Week in the Year

### Week of January 5



**H**OW many furnaces did you clean this year? How many did your competitors clean? How many furnaces do you suppose haven't been cleaned in five years, or since they were installed, and need it badly? You'd be surprised! This market hasn't been scratched! Plant yourself at the telephone and keep calling numbers for the next hour and you'll get enough cleaning work to keep the gang busy for a couple of days. Of course, you'll get turned down a lot but after you get the hang of it your percentage will be better. Later on you'll have to hire someone with a sweeter voice for the telephone work, while you check up on the cleaning crew and follow up the repair and replacement work they report in. Yes, you can cover a lot more ground, do better work and make it pay its way with a good vacuum cleaner.

### Week of January 12

**W**HY not start getting out that letter campaign on ..... you have been thinking about? This is a good time for it. Oh yes, you have. You've got plenty of money. All it takes to start a direct mail advertising campaign is one prospect, one sheet of paper, one envelope and one postage stamp. A penny post card will do. You can borrow enough from Sonny's dime bank for the start of a pretty good campaign.



### Week of January 19

**R**EGARDLESS of what kind of a display window you have, you can multiply its effectiveness with flood light reflectors at night. Colored paper, a fan and a light bulb can be made to simulate fire in the furnace. With an old alarm clock, a knife switch and a spool you can easily rig up a device to turn off the lights after the picture show crowd has gone home.

### Week of January 26

**Y**OU can't judge a man by his clothes but if he looks like he had slept in them someone may think that he has. Take off your coat, roll up your sleeves, don the blue denims



when occasion demands, but when you're selling quality heating service to quality folks you must look your best.

### Week of February 2

**H**OW did you happen to get into the sheet metal business? Are you proud of it? You can well be—if you are successful. And if you are successful, it is not primarily because of your mechanical skill but because of your ability as a manager—of men, of materials, of money. It is because of your ability to **SELL** the products of your skillful management. It is safe to say that if you are a real success in this business you would be as great a success in any other business.

### Week of February 9

**H**OW much relative humidity is delivered by that job up on the hill you put in last week? Well, maybe so, but how do you know? The only way to be sure about it is to buy



for \$5.00 a good sling psychrometer which you can carry around in your pocket. It's an effective way of showing prospects how dry is the air they breathe. When you install a humidifier, urge your customer to buy a hygrometer (wet and dry bulb thermometer) for registering the percentage of humidity. Folks like to show their friends how moist their homes are, which will help to sell humidifiers and warm-air heating plants for you next year.

### Week of February 16

**P**ASS up your favorite movie tonight and pick out one of the poorly attended theatres. Study its ventilating problem (that's one of the reasons it is poorly attended) and make some pencil sketches when you get home. When you have solved this problem (and it is your business to solve it), sell the proprietor on your idea of improving the ventilation in his theatre. When you get through with that job, there are a dozen or more similar jobs around town that need your expert attention—public lavatories, restaurants, schools and other places where many people gather and devitalize the air.



# MERCHANDISING ALMANAC



## Week of February 23



**S**UCCESS in the oil burner business depends on knowledge—not only knowledge of combustion engineering, but knowledge of heating plant design. You can render a much needed service to oil burner owners in your community if you will take the trouble to acquire the necessary knowledge. Study up on oil heating problems whether you sell oil burners or not. It will PAY.

## Week of March 2

**I**F you haven't set aside a sum for advertising, sit down now and allot a small percentage of last year's gross sales (5% is a small commission to pay a good salesman) and resolve to spend it in a consistent campaign. Call in your local newspaper man and have him help you plan a schedule and help lay out the ads. Tell him you want to talk about heating efficiency, the Standard Code, humidity, comfort—not about steel, cast iron, shaker handles or what not.

## Week of March 9

**R**EMEMBER that young Smith fellow in that new bungalow in the east end of town whose heating plant wouldn't deliver last winter, but who couldn't afford a new heating plant or extensive alterations and meet his payments on the house and furniture too? Well, he's got the furniture about paid for now. Why not run out and see if you can sell him a blower so he can get heat in that north bed-room where the baby sleeps. Maybe a propeller type fan will do the work.



## Week of March 16

**N**OW is the time to do something about your window display. If you have ANY kind of window you can put it to work to some advantage. If you have a double window with platform, one side can be devoted to examples of your craftsmanship in cornice work with show cards suggesting needed repairs. In the other window, display heating specialties with placards showing what they are designed to accomplish. If you have an open type window, set up a furnace as far forward as possible, completely equipped with all accessories labeled to indicate what they will accomplish.

## Week of March 23

**P**UT your shop frontage to work for you. You may not have an ideal location for attracting passersby, nor the best kind of show window for display purpose, but you can fix up some kind of a display that will at least not



impress unfavorably the few people who do pass your shop. You will be surprised at the things you can do with your window when you really make the effort.

## Week of March 30

**I**F for any reason you do not handle an oil burner, call on the best oil burner dealer in town and tell him the things he needs to know about warm air heating. Sell him on the idea of putting furnaces in first class shape, resetting and bringing the plant up to required capacity BEFORE he installs his burner. Tell him about furnace fans and blowers for increasing heating efficiency. You can help each other.

## Week of April 6

**W**HAT do you know about gas heating? It will pay you to call on the commercial manager or home heating executive of your local gas company. He can give you some valuable information about the quick, clean profit opportunities in the sale of gas-fired warm air heaters. If the gas company handles and sells gas furnaces you can work with them to equal advantage making installations for them. They are glad to co-operate with heating contractors who know how to install correctly.



## Week of April 13

**A**BOUT that job that comes up again this week—the one that you and four other dealers have been fighting over for weeks! If you land it—if you are the lucky (?) one—will you make a really decent profit on it, even if you don't have to whittle your price again? Are you sure? Unless you can land it at YOUR price and install it YOUR way, forget about it. Create your own prospects, selling them on their need for healthfully conditioned warm air.

## Week of April 20

**R**UN through your back files of AMERICAN ARTISAN and pick out issues containing articles and illustrations featuring metal domes, unusual metal ornamentation, cornices, etc. Stick these in your kit bag and call on the six leading architects in your town. They will be glad to be reminded of the growing use of metal in architectural design and to learn that you can do this kind of work.





# MERCHANDISING ALMANAC



## Week of April 27



**D**ID you ever make a survey of gutters and downspouts in any neighborhood? Just a few hours of looking around will give you enough work to keep you busy for a week. Make

a memorandum of the spouts with holes or rust showing through what is left of the paint. Call up the owners, call the defect to their attention. Most of them will be glad to let you do the needed repairing and painting inside with mineral paint.

## Week of May 4

**H**ERE'S a good tip for any day in the year! Resolve right now to quit wasting time "figuring" on jobs on which every Tom, Dick and Harry in town is bidding. Let someone else swap dollars! Dig up your own prospects! They won't be interested in competitive bids if you sell them on your ability to do the kind of a job that the "bidders" can't touch.

## Week of May 11

**W**HY not organize a local furnace club? Don't wait for someone else. Do it yourself! Most warm air furnace dealers agree that such organizations are needed and most of them agree that they could in this way avoid price cutting. This is a fruitless aim and ends only in trouble. If you can establish as the chief aim of your club an accounting service in charge of a qualified accountant, it will accomplish



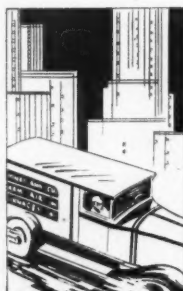
more than can be accomplished in any other way. If you and your fellow dealers can learn to know their costs—all of them—the price cutting evil will largely take care of itself.

## Week of May 18

**T**ALK moisture in heating. It's one of the biggest things you have to sell and will interest your prospect more than the gear shift on the furnace, if you can explain why our bodies need moist air and that most of the colds and prevalent chronic diseases of the respiratory organs are occasioned by the Sahara-dry air we breathe.

## Week of May 25

**H**OW much would it be worth to you to have a bill board with your advertising attractively displayed on it and hauled all over town on wheels where everyone can see it? Well, you've got one—maybe several—that

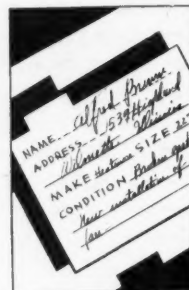


may be advertising you unfavorably, saying that you are shoddy, cheap, unaggressive. Keep your trucks painted and clean and use the side panels or end gates for signs that properly advertise your business.

## Week of June 1

**K**EEP a record of the jobs you lose to price competition—especially the ones that were under your price by a big margin. Follow them up during the first severe weather. Find out how that back room upstairs is heating—how much fuel is being consumed. Maybe you can get the job of changing the warm air pipes and putting in an extra cold air return as you recommended, a furnace of adequate size—or a fan or blower. Even if you don't land any business it will pay you to put yourself on record as a man who knows his business and who sells 'em and installs 'em right or not at all.

## Week of June 8



**Y**OU are not getting the most out of your furnace cleaning service unless you make it a part of the regular routine to thoroughly examine every plant cleaned. Insist upon a

complete report on every plant cleaned on penalty of dismissal if it isn't made. More than fifty per cent. of the furnaces cleaned will result in repair work merely by telephoning the owner and suggesting it and by proper follow up a large percentage can be sold replacements or major alterations.

## Week of June 15

**I** LIVE in your town and my house needs a new heating plant. Can you give me six good reasons why I should install a warm air system rather than a radiation system? Can you give me six good reasons why I should give you the job at a price considerably higher than I can get it done for by your competitors? Think this over, for upon your answers depends your future in the business in which you are engaged.

## Week of June 22

**I**F you don't already know, analyze your cost records and find out on which of the jobs you did this year you made a really decent profit. Then resolve to concentrate on the profitable jobs during 1931—the jobs that build your reputation. If you don't know how much you made on each job



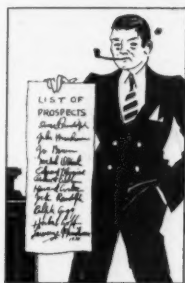
it's high time to begin finding out. Unless you know your costs, you will be lucky to make any profit at all. There is no point in losing on one job the profit you make on another.



# MERCHANDISING ALMANAC



## Week of June 29



**H**OW many prospects are there in your town for (1) new heating plants, (2) reconditioning, (3) vacuum cleaning, (4) humidifiers, (5) stokers, (6) oil burners, (7) automatic heat regulators, (8) gas heating, (9) fans or blowers, and (10) incinerators? It might be profitable to find out, cashing in on these lucrative departments of the heating business.

## Week of July 6

**M**INIATURE models of things you make in metal—furnaces, garages, corrugated roofing, guttering and spouting, and many other items your imagination will conceive—attract favorable attention in a window display. But don't neglect to label everything with placards, with a definite selling suggestion. And don't leave any display in too long.

## Week of July 13

**Y**OU need an adequate system for accurately determining your costs, properly supervised. Perhaps your business is not large enough to justify the services of a full time accountant. Part time accountants are usually unfamiliar with the difficult cost problems peculiar to your business. There are, however, adequate accounting systems available and a dozen—or even five or six—local contractors can employ jointly an accountant who can supervise the operation of such



a cost finding system for you, balancing your accounts monthly and preparing an annual profit and loss statement. Why not talk to a few of your fellow dealers about such a plan?

## Week of July 20

**I** KNOW a dealer who is really an exceptional salesman, who sells nothing but the best kind of installations at the highest prices. Yet he is not making much money because he doesn't get enough of these prospects to sell. He does the hardest kind of selling—raising the price buyer to a quality buyer, in the face of price competition—but he hasn't found out how to create prospects. He doesn't advertise. And he spends too much time in overalls. His greatest talent is going to waste because he thinks the shop won't run well unless he is on hand to personally manage it.

## Week of July 27

**W**ALK across the street and take a look at your shop. How does it look to you? Well, that's the way it looks to other people. The least you can do is to keep it clean and a coat



of paint won't cost much. Put some of that spare time in the shop to work. It may not bring in any business but it will keep you from losing some.

## Week of August 3

**D**O you own a vacuum furnace cleaner? Only one? Then you are not going out after cleaning work as you should. You can keep several cleaning crews busy practically throughout the year if you will go out after this work. It won't drift in. Newspaper and telephone directory advertising, letters and post cards, telephone and personal solicitation—these will bring in the jobs. And it will pay if you systematize the work and are not afraid to charge for a good job.

## Week of August 10

**T**ODAY is a good day to have lunch with one of your competitors. They are good fellows; though some of them do business in a manner of which you do not approve. If you can get to know these boys intimately a lot of your most annoying difficulties can be ironed out. And don't be too secretive. Talk freely about the past jobs on which you have both bid. Tell him about how and why you cut out going after the competitive bid jobs. There will be plenty of work for all of you if you can agree to live and let live—quit trying to strangle each other. Ever thought of organizing a club of some of the local dealers? Why not start it off by inviting a half dozen of them over to your house some evening this week?



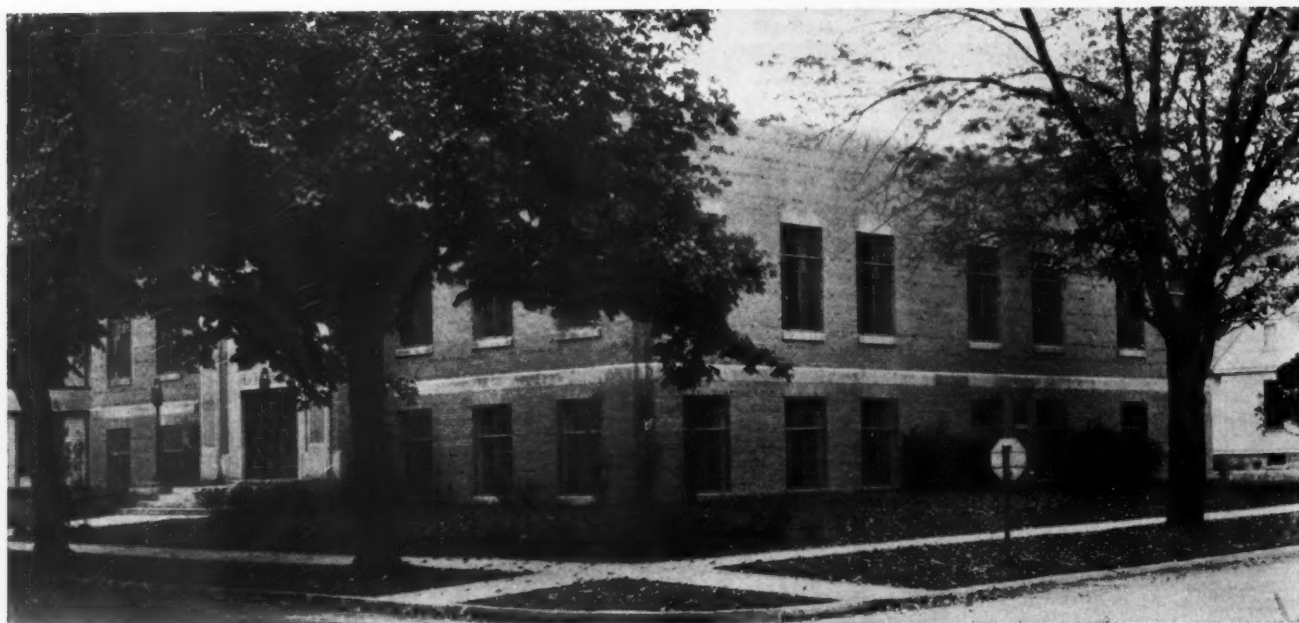
## Week of August 17

**W**HY do you cut a price to beat a competitor out of a job? Isn't it pretty much the same instinct that made knights of old put their lances at rest and set their chargers for the impact the moment they saw another helmeted brother appearing on the horizon, neither gaining aught but hollow satisfaction from the conflict? Civilized men find it wiser to co-operate for common purposes—to live and let live. If you could realize that nothing can be gained by taking a job to keep someone else from getting it, you will stop that sort of thing. Next time your price (honestly arrived at) is high, justify your price or withdraw quietly from the battle, thus avoiding much needless loss of blood on both sides.



— TO BE CONTINUED IN FOLLOWING ISSUES —





The exterior of the lodge hall shows a two-story building of modern design and construction

# Designing the Ducts and Determining Pressure Loss for a Wisconsin Lodge Hall

**T**HE writer of these articles has been called a "destructive critic." He has been guilty of condemning dealers and warm air contractors who place a desk fan in the rear of a "hot air" furnace and think they have installed a complete air conditioning system.

The irreconcilable stand of the best or none is on a par with the old adage "be good and you will be lonesome." However the irreconcilable occasionally meets a kindred spirit and here the writer pauses to sing the praises of one, Roy Glaser of the Kruckman and Glaser Hdw. Company of Burlington, Wisconsin. He is waging a battle against the odds of many competitors who still install "hot air" furnaces.

With a system that cost almost twice as much as one that would

**By PLATTE OVERTON**  
*Consulting Engineer*

produce heat, Roy convinced the building committee that the money invested in an air conditioning system would return them high dividends on the investment.

I do not believe that Roy talked technicalities to sell this installation. He has the reputation for doing only the best of work, and if you want it done up to date and as near perfect as modern science and investigation prove it should be you will look him up and leave it to him as you would your lawyer, doctor, or pastor. The writer is not his press agent, and like most men of this type, Roy is modest about his ability. He will no doubt be

gunning for the writer when he reads this article.

But to get back to our engineering.

## Design of Duct System

As we must maintain individual temperature control in each room, we must run a separate duct to each room as the temp. in the various ducts will vary.

For this installation, the ducts were sized to velocities. Where the duct leaves the plenum chamber, the ducts were sized for a vel. of 700 to 800 ft. per min., in the risers 600 to 700 ft. per min., in the attic ducts 600 to 800 ft. per min. These are the vel. for the small ducts. The larger ducts such as to room 101 may be designed for a higher vel., 800 to 1000 ft. at the plenum,



800 to 900 in the risers, 600 to 800 in the attic ducts. The larger the duct the greater the allowable velocity.

Lower velocities must be maintained in the returns, and they should not exceed 500 ft. per min. at any point except in the return chamber.

### Determining Resistance Loss

Our static loss will be the sum of the losses in the piping, washer, and over the heater. We estimate the pressure loss for the piping system on the longest duct. In the above plan it will be the duct to room 113.

We measure the duct for length and for the various sizes. We have 104 ft. of 12x10, to this we add 10 ft. for each 90 degree elbow. As we have two 90 deg. and four 45 deg., or a total of four 90 deg., or 148 ft. of 12x10 to carry 480 c.f.m.

Our riser is 16 ft. of 10x10. Our

The chart for determining the resistance in ducts is indispensable to the heating man who wants to do real engineering. The chart shows resistance in round pipes. For rectangular ducts these figures must be translated through the use of the chart on the following page

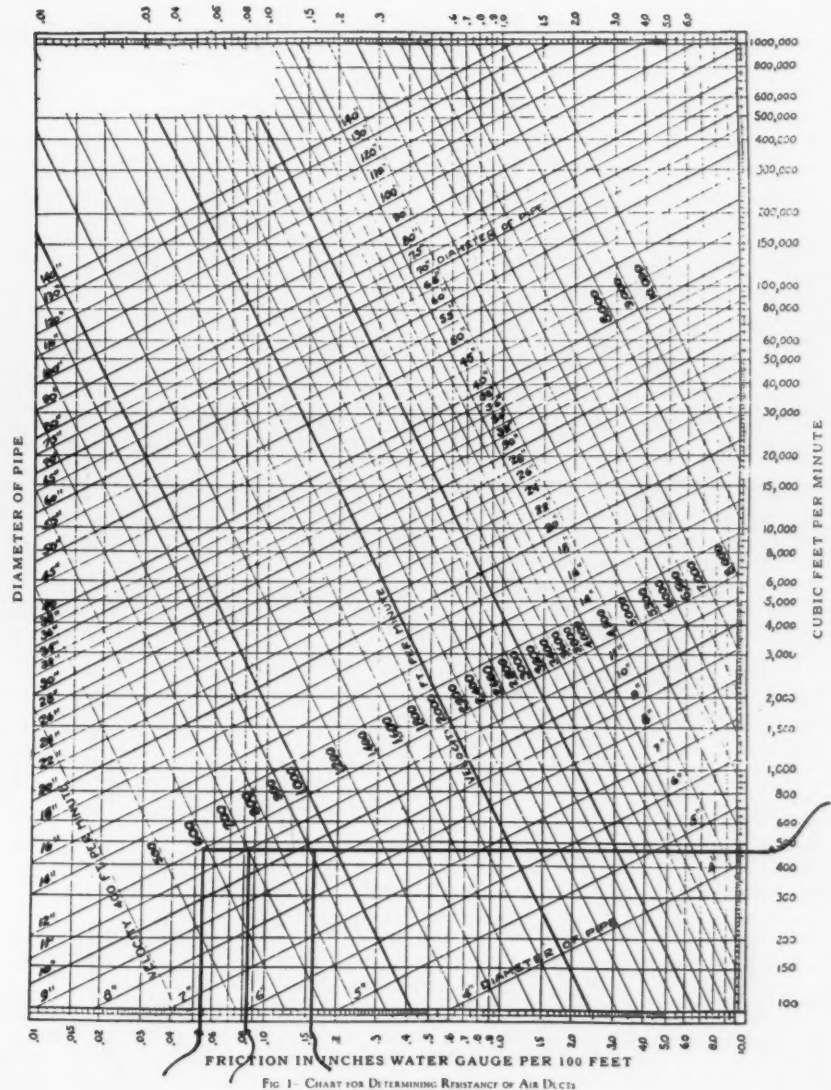
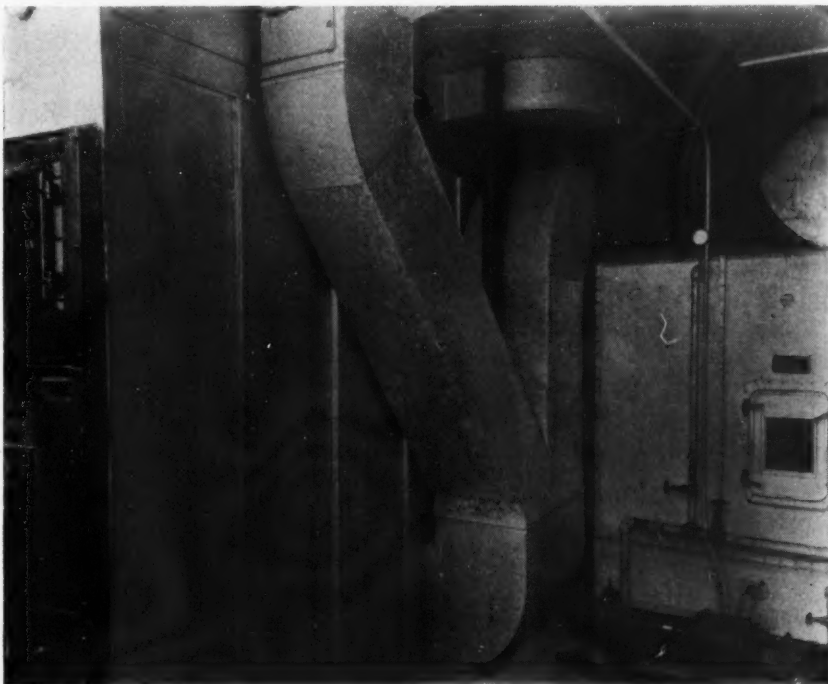


FIG. 1- CHART FOR DETERMINING RESISTANCE OF AIR DUCTS



Here is the heater and the washer. This is an oil burner plant with the rest of the equipment operating automatically

basement run is 8x12 with 14 ft. with two long elbows equivalent to one 90 deg. and one short 90 deg., or a total of 34 ft.

We now refer to our chart for determining the resistance in air ducts. As the chart reads in round ducts, we refer to the table of circular equivalents of rectangular ducts for equal friction per lineal ft. We find our 12x10 duct is equal to a round duct 12 inches in diameter.

We now locate 480 c.f.m. on the chart at the right hand side and follow through to the left until we intersect with the 12 inch diameter line and here we drop to the base of the chart and find .054 for our resistance in 100 ft. of pipe. As we have 148 ft., we have 148 times .054 or .0799.

Our riser is 10x10 and equals a

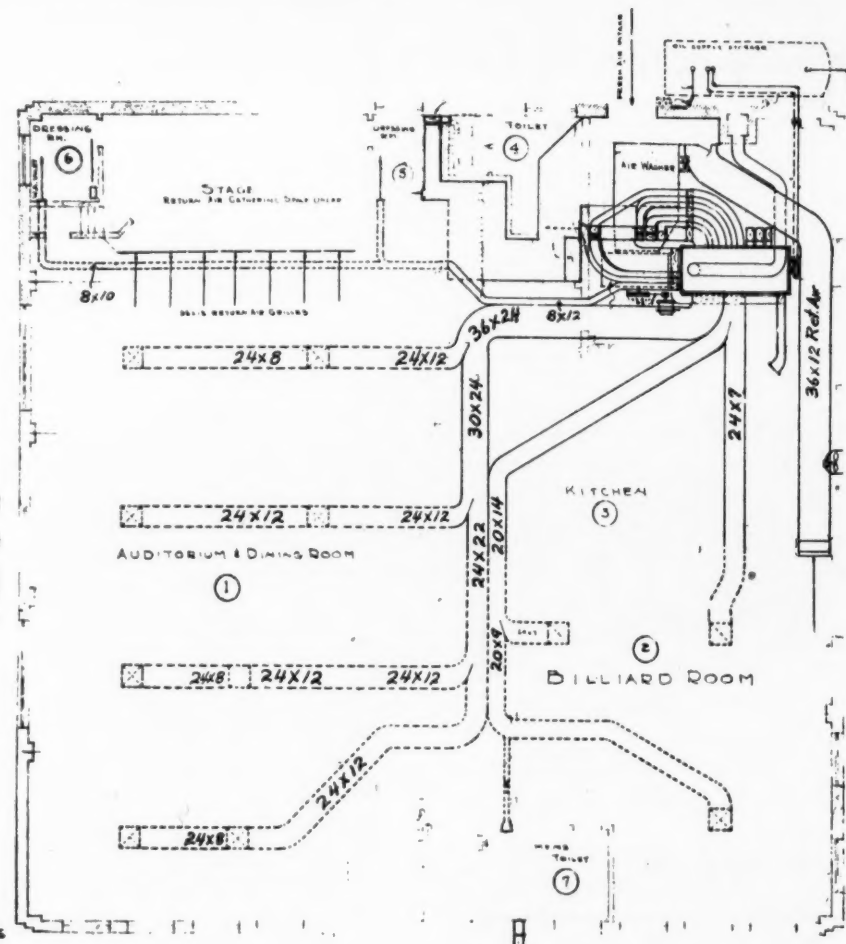
duct 11 inches round. For this duct we have a resistance of .082 for 100 ft. As we have but 16 ft., we have 16/100 of .082 or .0131.

Our 8x12 duct in basement is equal to a round duct 10.7 inches, and our resistance is .152 for 100 ft., or .0516 for 34 ft.

Our total is .0799 plus .0131 plus .0516 equals .1446 for the supply ducts. Our resistance for the returns we place as the same as our supply or .15 approx. Our resistance over the heater will be .25

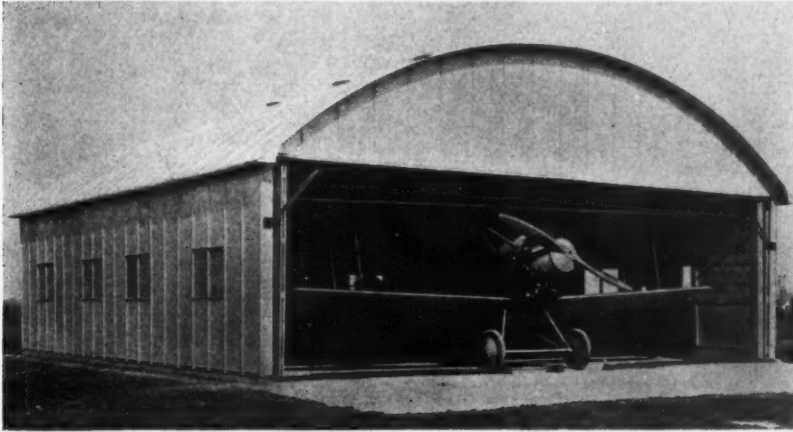
Right—Layout of the piping system for the first floor. The ducts are sized for velocities. Each room has its own duct, since each room is maintained at its own established temperature

Below—The chart which we use to transfer velocities in round pipe to velocities in rectangular ducts by determining the size of the duct necessary to carry the velocity we want through round pipe



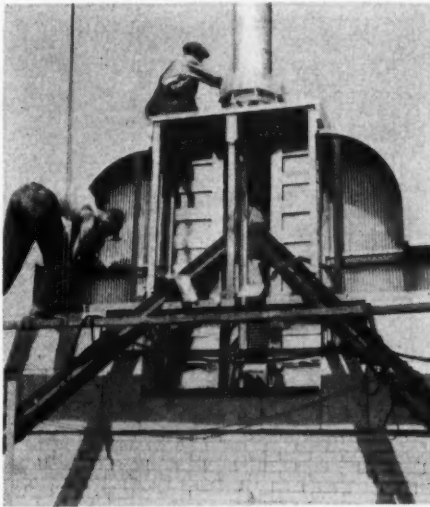
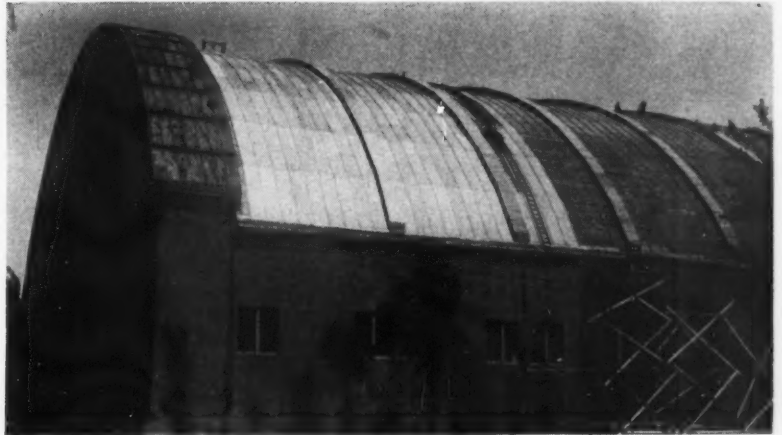
CIRCULAR EQUIVALENTS OF RECTANGULAR DUCTS																																
Rect. Duct	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33			
5	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8			
6	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9			
7	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0			
8	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1			
9	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2			
10	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3			
11	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4			
12	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5			
13	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6			
14	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7			
15	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8			
16	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9			
17	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0			
18	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1			
19	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2			
20	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3			
21	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4			
22	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5			
23	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6			
24	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7			
25	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8			
26	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9			
27	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0			
28	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1			
29	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2			
30	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3			
31	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4			
32	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5			
33	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6			
34	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7			
35	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8			
36	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9			
37	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0			
38	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1			
39	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2			
40	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3			
41	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4			
42	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5			
43	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6			
44	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7			
45	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8			
46	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9			
47	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0			
48	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1			
49	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2			
50	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3			

## MANY METALS—MANY USES—ALL PERMANENT



Corrugated iron has found a new use in making small, fire-proof airplane hangers. This is a typical installation

Right—The University of Illinois armory roofed with zinc in 1915. The roof is without a flaw



Left — Aluminum is widely used to-day for ornamentation. This is a flag pole enclosure in New York

Right—Sheet metal finds many uses on the farm. Here is a large barn in which the outside is all metal



Below—This large building is sheathed in zinc. It is resistant to action of chemicals in the fumes and atmosphere







B. L. Schwartz, graduate engineer and Pittsburgh warm air heating contractor

# B. L. Schwartz Proves—



The office and show room of the Schwartz company is designed to give the customer every opportunity to examine the equipment recommended for his heating system

**F**IFTY thousand dollars of gross annual business is a sizable amount for any warm air heating organization.

But \$50,000 from a one-man organization during 1930 is worth looking into.

And when the facts are added that this business is based on and confined almost entirely to jobs running from \$1,000 up to more than \$7,000, with each job designed by a heating engineer to the particular house it is to be placed in, and that each job represents just about the highest degree of design, equipment

and workmanship possible, without skimping on labor costs or cut corners, the \$50,000 gross business represents a picture from which many pointers may be gotten.

This is a story of the results obtained by the Schwartz Furnace Company of Pittsburgh, a one man organization owned and managed by B. L. Schwartz, whose excellent gas furnace heating jobs you have read about in *AMERICAN ARTISAN*.

This one-man organization was started three years ago and has successively passed through the \$30,000, \$40,000 and \$50,000 an-

nual incomes.

In this day of so-called "big business" the one-man organization is far too frequently looked down upon. We like to kid ourselves that our abilities are of such high caliber that given just the right circumstances we might easily be the guiding genius of a huge organization with salesmen hustling in and out, workmen busily going from one job to another, and with checks making the postman round shouldered.

The trouble is it's too often a pipe dream.

When Mr. Schwartz started his business he actually had had the experience and training in guiding such an organization. He had, therefore, to make the important decision of a one-man organization with personal supervision over every detail, or a large organization with its attendant worries and troubles.

His decision was to stay small enough so that he could personally keep in touch with everything which was going on and do most of the selling himself.

This decision was further strengthened by the fact that his analysis showed the best field open was one for an engineering service selling to home owners who were willing and able to buy heating systems costing from \$1,000 to \$7,000.

In Pittsburgh, when the Schwartz company opened, this field had not been touched by contractors selling warm air heat. At the same time, the opportunity was there since Pittsburgh has natural gas and the gas-fired, warm air furnace was attracting public attention. The local gas company had done most of this business. Their salesmen dug up prospects, and tried to sell them

# That \$50,000 Gross Is Possible By a One Man Heating Firm

good installations, but these salesmen did not know much about heating, and, as a consequence, lost many possible sales.

A connection was made between the gas company and the Schwartz Furnace Company whereby the gas company salesmen dug out the prospects and these were turned over to Schwartz who designed a special heating system for the individual house and sold the owner this system. The Schwartz company also installs the job and guarantees it.

The whole aim of this company is to render an engineering service and do a selling job. Large homes, particularly, have been aimed at and

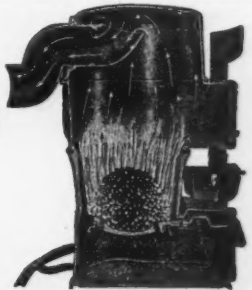
## But You Need Big Ideas And You Must Get Out and Sell

This advertisement appears in the classified telephone book. It is practically the only advertising the company is doing at present

### WISE FURNACE

CAST OR STEEL

"Wise People Buy  
Wise Furnaces"



**Expert Heating Service by Registered Engineers**

**Bryant and Pennsylvania Gas Furnaces**  
Automatically Controlled

**Schwartz Air Conditioning System**

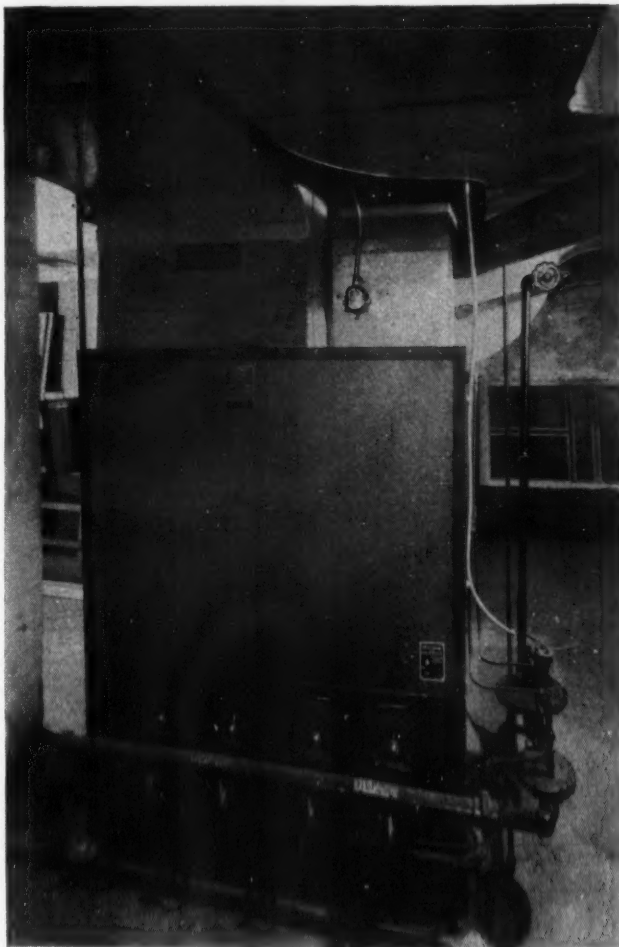
Filtered, Humidified Air for  
Winter Heat and Summer Cooling  
Completely Automatic

**SCHWARTZ FURNACE CO.**

2336 CARSON STREET

HE mlock 4080

B. L. SCHWARTZ, Gen'l Manager—Res. CA rrick 2368



Here is a typical Schwartz installation—gas furnace, rectangular ducts and full automatic control. This is a forced air plant in a large house

most of the work done to date has been with this class of prospect. While a secondary organization has been built up to sell to the home owner who wants warm air heat, with coal as the fuel, the most interesting and the most profitable part of the business has come from the large, gas-fired jobs.

In this field the job selling for \$1,000 is considered a small installation and effort is made to get into an even higher price range. Typical of this work is a job recently completed where three complete gas fired furnaces, each with its own blower and duct work was placed in a new house. The heating system cost \$7,700.

How such jobs are sold consti-

SCHWARTZ FURNACE CO.  
PITTSBURGH, PA.

Dear Mr. \_\_\_\_\_:

This will acknowledge and thank you for your order placed with us on \_\_\_\_\_, for the installation of a warm air heating system in your home. We have entered this on our books and will proceed with the installation as per agreement.

We feel that you have made a wise choice in entrusting your heating problem to us, and assure you that it will receive our very best attention.

Again thanking you and assuring you of our cooperation at all times, we remain

Yours, very truly,

SCHWARTZ FURNACE COMPANY

RLS:AB

GEN. MGR.

▲  
This letter is sent out just as soon as the order is received for a new heating system. The letter takes advantage of the opportunity to emphasize the soundness of the customer's judgment in selecting this company to do the work  
▼

nary furnace job, and that of a real engineered heating layout.

"We omit technical details if the customer is completely ignorant of mechanical things and cannot follow such thoughts. On the contrary, we stress the value of proper register locations, including that of return air intakes, humidity control, automatic gas control, etc. If the job is to be a forced air plant, we stress the ventilation feature which the principle of forced air heating adds. We also feature the fact that more uniform temperatures are obtained because of this means, and that the system can furthermore be used for cooling in

tutes one of the most interesting phases of the Schwartz business. What principles of selling, the average heating man will ask, make it possible to sell such jobs?

The answer is—just the same selling arguments and approaches as are used to sell the small installation.

The aim of the company is to make each job just as satisfactory to the owner as it is possible to design and build. Each job is a problem of its own. No standardized installation is sold, but a completely engineered job is laid out and sold the owner.

Every phase of selling effort is based on this principle of doing the best possible. The shop and office is laid out to be a place where the customer can be taken and shown just what he is going to buy. Every piece of equipment is placed in the office so that when the selling is under way each point raised can be illustrated right on the equipment under discussion.

Here is how Mr. Schwartz describes his efforts.

"There is nothing unusual or contrary to well established princi-

▲  
This letter is mailed after the work is done and the account is paid. It extends the services of the company and lays the foundation for future pleasant relations through service  
▼

SCHWARTZ FURNACE CO.  
PITTSBURGH, PA.

Dear Mr. \_\_\_\_\_:

This will acknowledge receipt of your check in the amount of \$\_\_\_\_\_, to apply on your heating account with us. This remittance closes your account in full.

We wish to thank you for your promptness in taking care of your obligation, and to assure you that we appreciate the privilege of having had this business relation with you.

Please feel free to call upon us at any time wherein we may be of service. Assuring you of our cooperation, we remain

Yours very truly,

SCHWARTZ FURNACE COMPANY

RLS:AB

GEN. MGR.

ples of good judgment and business in connection with our normal office and shop procedure. We are simply making every effort to do a good job, and apparently our efforts are being appreciated as evidenced by continued repeat orders.

"Referring specifically to sales points brought out in connection with the sale of heating systems ranging in price from \$1000 up, we endeavor to have our prospect realize the difference between an ordi-

summer; thus making it a twelve-month proposition.

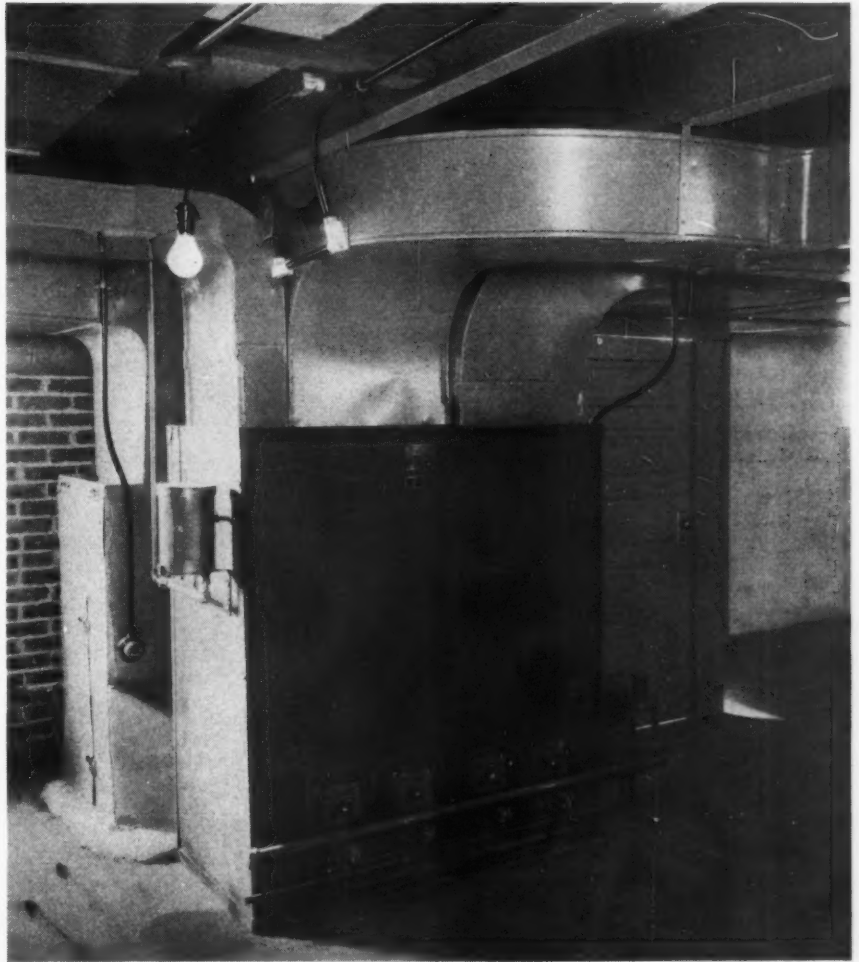
"We endeavor to have our prospects visualize the flow of heated and returned air in their home. We stress the necessity for proper register locations, so that there shall be no interference of counterflowing air currents. Quite often the prospect will ask why he cannot have a register placed in a certain location. If this location is inadvisable for several reasons, we present a mental



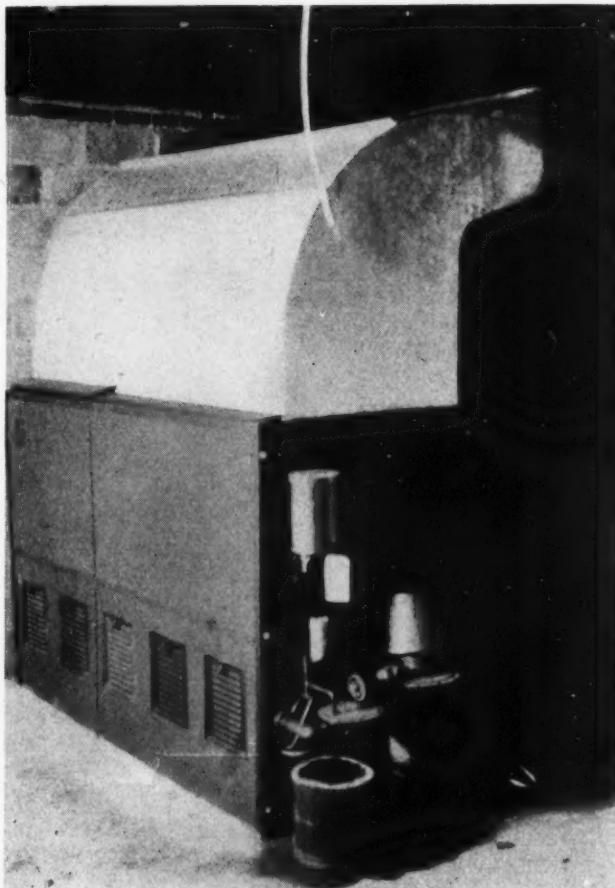
picture to the prospect which makes him realize that there will be conflicting air currents with subsequent interference of proper heat distribution. In this way we usually are given permission to place our registers and grilles where they will be most effective.

"We do not stress the summer cooling feature to extremes. We state that a definite cooling effect is given by the use of the fan, and compare the air in motion to the simile of 'A running brook versus a stagnant pool of water.' We evade the answer to a definite question of how many degrees the fan reduces the temperature, by simply stating the cooling effect of air in motion corresponds to a gentle breeze from each register as being the desirable thing.

"We also bring out the necessity and advisability for humidity control. We take joy in bringing to light the fact that a radiator job gives a disagreeable dry heat whereas a humidified air conditioning plant gives us the proper moisture so essential to correct living



Above—Here is another Schwartz job, also in a residence. This job has been inspected by heating men from all parts of the country and has doubtless been used as a model by many contractors



This is one of the furnaces in a large house where three such units are used to supply heat. Each unit serves one main line trunk, the trunk, in turn, serving one part of the house

conditions.

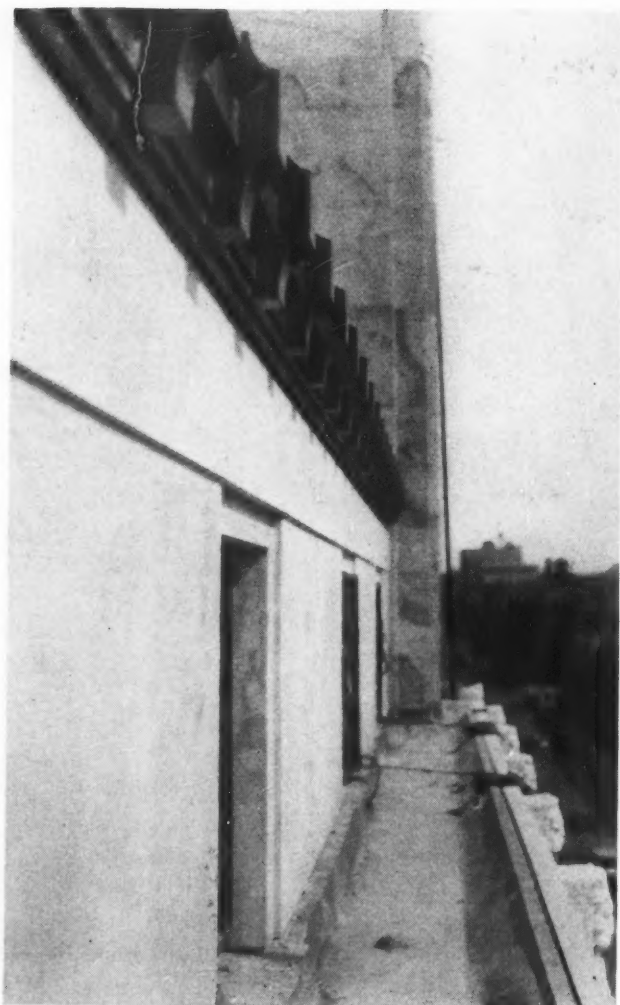
"In general, we endeavor to build up the customer's confidence in our ability to properly engineer and install the system which he would like to have in his home.

"When we get into the larger home class of prospects, the sales methods used are in general those which apply to smaller air conditioning jobs. Inasmuch as the general engineering principles are the same, it follows that the selling methods should be approximately the same.

"We make a complete layout for each job of consequence which we endeavor to sell. This may be in the form of a colored crayon plan on our own plan sheets, or a complete set of blueprints showing the various register locations, duct system, heater location, etc.

"Our advertising consists of a large advertisement in the classified section of the telephone directory. We have steadily refrained from

(Continued on page 110)



The eave line of the copper roof shows a dentil type cornice formed of copper noses set onto a receding face, also of copper. These dentils were formed and soldered in the shop, but were soldered to the cornice face on the job. The gutter is copper lined, ending on both edges in a calked joint with stone work

## Copper of On

It is probable that the most interesting feature of the job is the arrangement for clipping the pan sheets to the battens. This contractor has worked out a scheme in which the clips are cut out of scrap. The clips are rectangular in shape.

As the pan sheets are formed these clips are soldered to the vertical sides of the sheet. As shown on one of the drawings the clips are staggered up the sides of the sheet. When the pan sheet is slipped between the battens these clips are standing upright. As soon as the

THE New York Times, a newspaper with a national reputation, is building in Brooklyn a sub-printing and distributing building to facilitate the handling of papers throughout Long Island. This sub-station is an attractive structure of modern architecture embodying all those structural features which assure long life, free of maintenance expense.

The upper part of the building has a mansard roof on three sides, with a flush face along the alley at the rear. This mansard roof is of large proportions and is covered with a batten type copper roof having some unusual design and construction features.

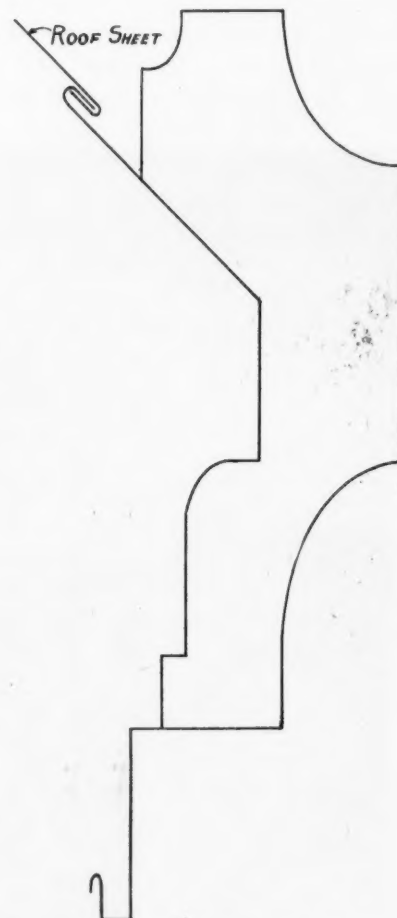
This copper roof, in addition to being a protection against weather, is a distinct architectural feature of the building. The roof tops a set back upper floor and is trimmed around the outside edge with a heavy copper cornice.

The contractor on this job was August Kuhnla, of Brooklyn.

The general design of the roof is a flat pitched mansard with a molding line near the top and a cornice at the bottom of the roof. Both the molding line and the cornice have some interesting details of design and construction.

The roof is quite long at the front elevation. It is, however, unbroken so that the design consists of pan sheets between the battens stopped by the molding and ending at the bottom with the heavy cornice.

The battens on this job are of wood and shaped six sided. In other words the batten is a regular triangular topped batten with the apex cut off. The copper batten strip does not follow the entire contour of the batten, but comes to a sharp ridge at the top. This leaves a space between the batten cap and the top of the batten.



This is the cross-section of the copper dentil of the cornice. The outline of the cornice face is also shown

# Complex Design

## A New York Mansard Roof

pan sheet is on the sheathing the clips are bent over the batten and nailed. This eliminates all the trouble of forming the clips, placing them around the sides of the pan sheet and holding them in place while they are bent and nailed to the batten.

This plan has worked out nicely and assisted in speeding up the work of laying the large number of pan sheets used on this roof.

There is nothing unusual about the main roof so far as forming and laying the sheets is concerned. Because of the size of the roof there was much work in forming the sheets, but nothing unusual.

The contractor brought up a



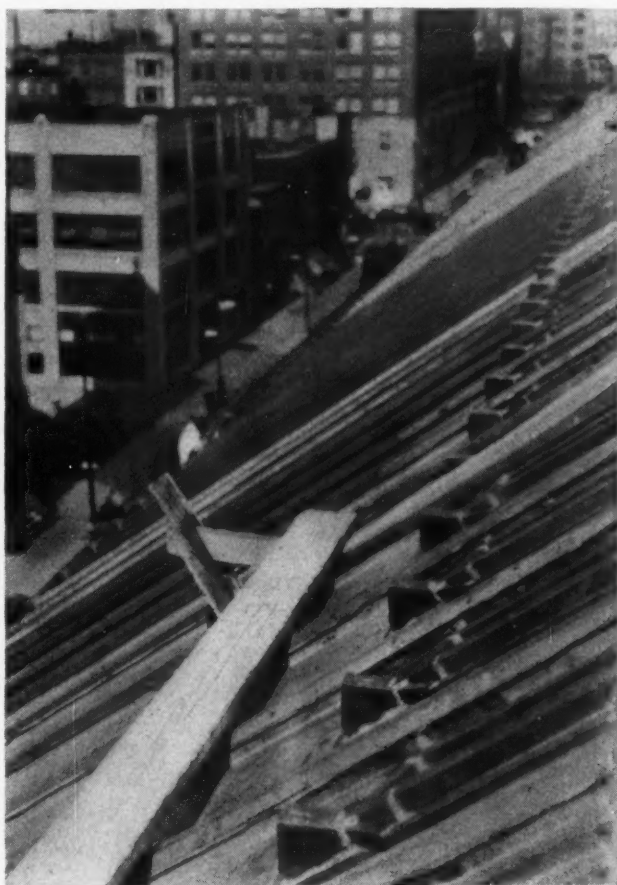
Laying the pan sheets between battens

brake and some benches to a pent-house on the roof and trucked his copper in sheets to the job. The

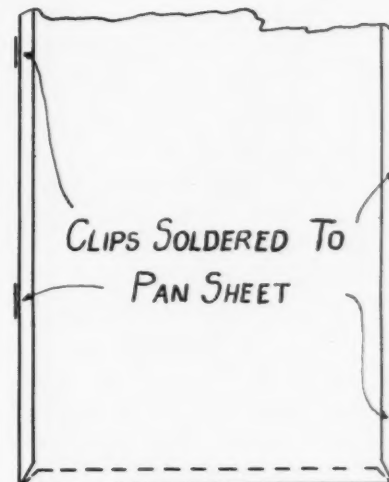
sheets were then cut up and formed in the job shop and stored until needed right on the roof. Two men working in the shop were able to keep up with the laying crew.

The ridge of the roof is capped with a single wide sheet formed as shown in one of the drawings. This sheet turns over the ridge and down the inside along the wall. The inside bottom is turned for a water joint with the masonry. The front face is turned to follow the slope of the roof and has a turned seam at the bottom which hooks into the turned seam of the pan sheet.

Just below the ridge there is a row of ornamentation formed of three square ridges of copper terminating in a point which is capped with a projecting, rectangular nose. The nose was formed of one piece and the ridges also of one piece.



Just below the ridge there is a molding set between the battens. This molding consists of rectangular copper noses forming a spear head for three rectangular false battens. All this work was soldered on the job



The batten clips were soldered to the verticle sides of the pan sheet. This saved much hand setting. The clips were cut from scrap





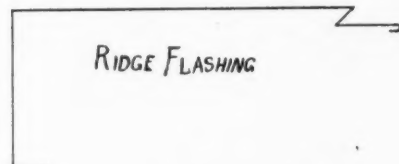
Doing a soldering job on the cornice dentils. There was a great deal of this work

Seven pieces were required for each section of molding. These were all soldered together on the job, rather than in the shop. The construction and appearance of this molding shows in one of the photographs.

At the eave line of the roof there is a line of very heavy molding. One of the drawings shows a cross section of this cornice. The sections were formed up in the shop

and soldered together in the shop. The units were then brought to the job and soldered to the roof sheets and the cornice.

The cornice is quite ornate, but of very good appearance either from the street or from the gutter line at the base of the attic story. The face of the cornice is formed out of two sheets. The bottom sheet forms the set backs of the bottom and the lower curve and



The cross section of the ridge sheet. It connects with the pan sheet and also turns over the back face and is calked to the wall

face of the cornice. The upper sheet forms the upper curve and the top of the cornice. To these sheets the dentils are soldered.

At the base of the attic floor

there is a wide box, copper-lined gutter. Two sheets were used to span this gutter. The back sheet forms the back face of the gutter



This is the cross section of the batten cap. The batten had its ridge cut off

and the flashing for the wall. The front sheet forms the bottom of the gutter the back flashing for the stone cornice. One of the photographs shows how the connection is made between the gutter lining and the cornice. The edge of the sheet is turned down into the slot of the stone and calked against water penetration. This construction was alternated so that seams are broken down the gutter.

## 30 Years of Service and Still Doing Its Work

At 1721 Master Street, Philadelphia, there are two old Excelsior tubular furnaces which were installed when the house was built 30 years ago.

The house has twelve large rooms and a bath. One front room is unusually large.

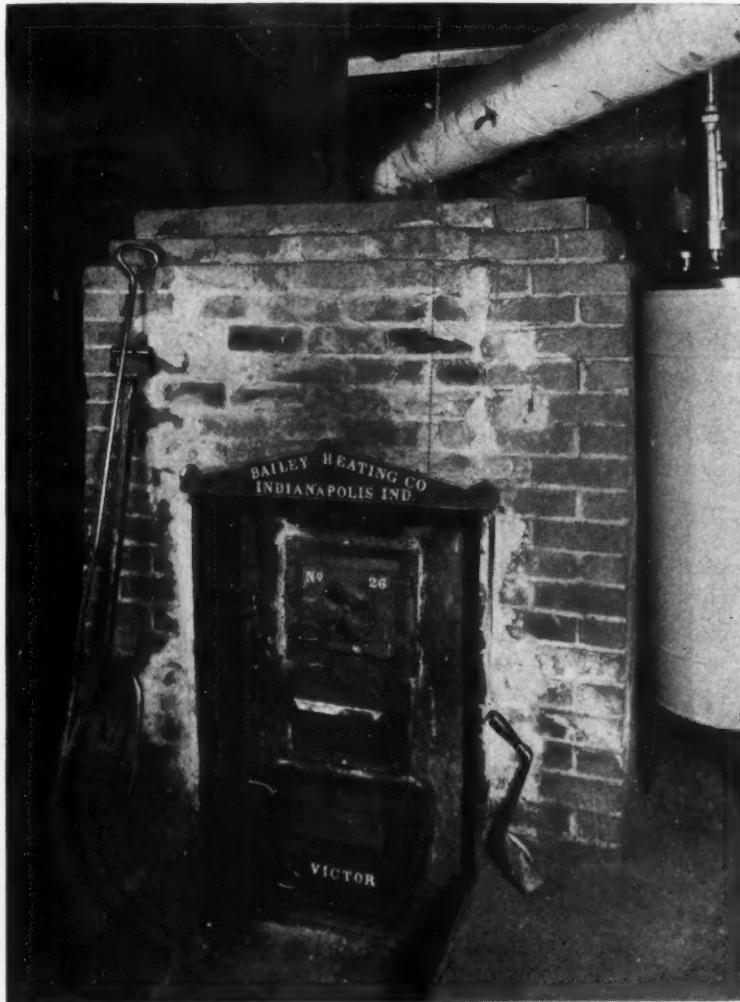
The furnaces are placed so that each one heats a part of the house. Through all the years the owner has never experienced discomfort regardless of outside temperatures.

When solicited recently, the owner stated he would prefer repairs for he was fully satisfied. Each of the furnaces has been repaired twice in 30 years at the expense of two cylinders and two grates each.



# This Furnace Has Been Through 36 Winters and 2 Floods

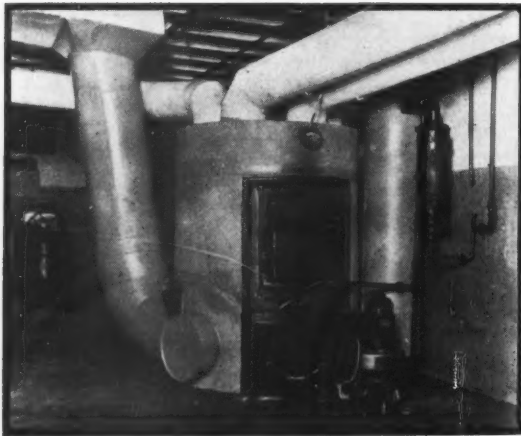
And is today faithfully heating an eight room house in Indianapolis, Ind.



The large frame house where this furnace is located was built in 1894. The builder occupied the house until 1902 when the present owner bought it. Neither owner has had any trouble with the heating plant, regardless of the weather

This old Victor furnace was placed in the house in 1894. Its casing is brick, with the furnace set in a pit in the floor. Twice during its long period of service it has been under flood waters. And each time, when the waters receded, the furnace has been fired without any expense other than cleaning. Its operation today is as satisfactory as it was in 1894.





One of Pansch's installations in the residence of an old customer

# There's Profit for You

**—But the Secret of Success Is in Knowing How, According to C. W. Pansch, Racine Warm Air Furnace and Sheet Metal Contractor, Whose Successful Methods in Oil Burner Sales Are Described Here**

**"A**RE you trying to get all the furnace dealers in the country to get into the oil burner business?" asked C. W. Pansch, successful Racine warm air heating contractor when an ARTISAN representative questioned him about his methods in oil burner sales and service. "If you are, you are going to find that success in the oil burner business, like anything else, depends on thorough knowledge of what you are selling. In the oil burner business that means not only that familiarity with the 'talking points' of the burner you are selling, but a thorough understanding of combustion principles as applied to all oil

burners and to the various types of heating plants in which they will be installed.

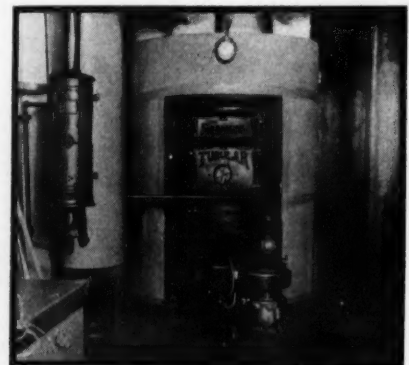
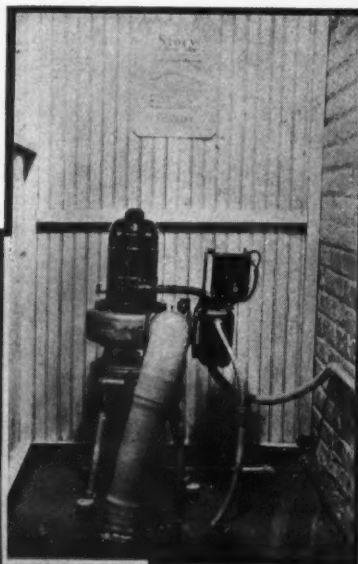
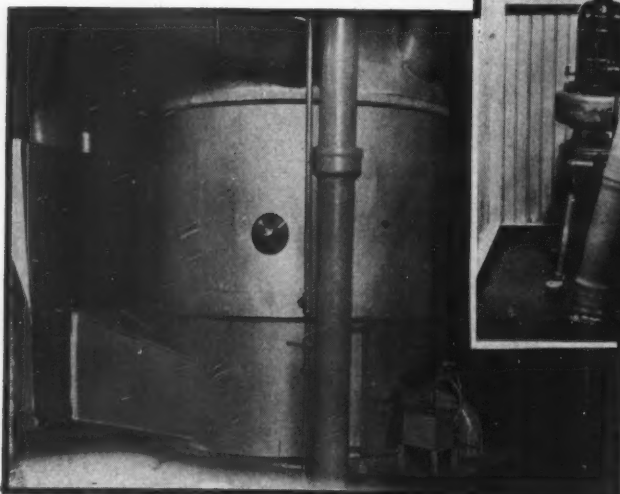
"Any dealer who gets into the oil burner business looking for an easy way to make more money by cashing in on the popular interest in all forms of automatic heat is apt to be bitterly disappointed. Unless he is prepared to sell something besides another good oil burner, he is likely to lose some money while getting his experience."

Pansch has been handling the Wayne oil burner for about three years during which time he has sold in the neighborhood of one hundred burners. How these burners were

sold, however, is of greater interest than how many were sold, as is the guiding principle which dominates all of Pansch's business operations—know what you're about before you go ahead.

During the first year that Pansch handled the Wayne burner he installed only three burners. The first one he installed in his own home for the purpose of testing it in use

Oil burner installation in Pansch's home showing result of successful experiment to locate oil burner mechanism at some distance from the heating plant—a very convenient arrangement where space near furnace is limited



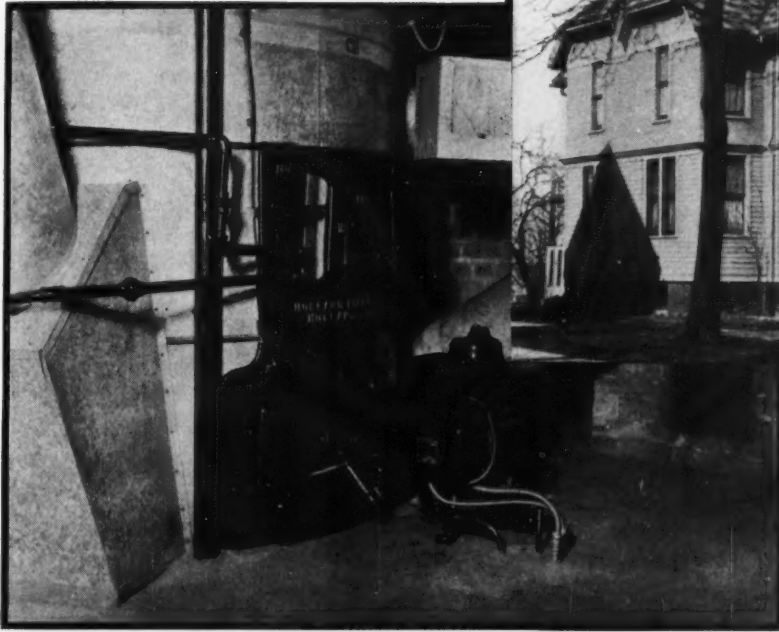
Warm air furnace owners were naturally among Pansch's best prospects

and finding out by various experiments exactly what it would do. Late in the heating season he installed the other two in the homes of former customers who had confidence in Pansch's judgment. These installations enabled him to carry his experimenting still further.

Even during the second year little effort was made to sell oil burners, the few sales that were made being on the basis of the satisfactory performance of those in operation. In the meantime, too, Pansch was



## in Oil Burners



This large warm air heated frame dwelling is satisfactorily heated with one of Pansch's burners. Pansch has proved the utility of his burner in a well installed warm air heating plant

building a reputation as a man who "knows his stuff" in the oil burner business and was beginning to cash in on the knowledge gained in study and experimentation.

There were numerous instances of owners of other makes of oil burners who experienced difficulties which no one seemed to be able to remedy. Pansch was able in almost every instance to locate the difficulty and save these people a lot of money. In many cases the heating plant itself was at fault and Pansch was able to make or recommend the needed changes. In other instances a simple adjustment of the burner, based on his knowledge of combustion principles, was all that was necessary.

On many of these calls Pansch offered his advisory services without charge—in fact he refused the offer of payment in some cases. It was not long, however, before these people began selling oil burners for Pansch. "There is a fellow by the name of Pansch who can tell you what you need," is the phrase passed over bridge or luncheon tables that is now selling burners for Pansch, and has enabled him to

pass the hundred mark in less than three seasons. It must be apparent that his success is on the basis of sound building.

The entire oil burner selling force consists of one man—Pansch. Consistent use of newspaper advertising enables a tie-up with the word of mouth advertising of the pleased customers and stimulates inquiries. Accompanying this article are reproductions of advertisements which are typical of those which Pansch runs regularly in the Racine newspapers.

One of the pitfalls encountered by many oil burner dealers, according to Pansch, is estimating the possible profits on the basis of so much for the cost of the burner, so much for the cost of installing, so much for sales overhead, and assuming that the rest will be profit. This method of calculation is misleading as how much is left for profit depends largely upon the *cost of servicing* which may run to a considerable item.

Pansch has reduced his servicing cost to an absolute minimum through extreme care in making the installation. In the first place,

*Pansch will not sell a burner for installation in a heating plant that is not adequate for the house, as he realizes that no oil burner can perform efficiently and economically under such a handicap. If the plant is inadequate, Pansch first sells his prospect on the importance of putting the heating plant in shape and will lose the job rather than install his burner without such changes being made.*

In recommending changes in the heating plant he is indifferent as to whether he or some other heating contractor does the work, but insists that it be done as he specifies it. In most instances his knowledge of what is needed and his extreme confidence in his recommendations instills the confidence of the customer and Pansch gets the work on a non-competitive basis. He never cuts his price to secure this kind of work. Occasionally he loses an oil burner job to a competitor when the home owner is unwilling to make necessary changes in the heating plant. Already he has had numerous lost customers come back to him with their troubles.

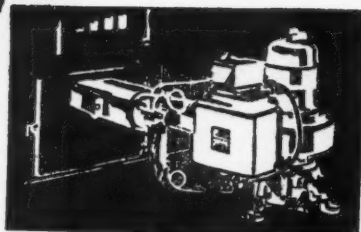
In adapting his burner to the

## No Furnace Cares for Mother



No Changing Tem-  
peratures to Im-  
peril the Children's  
Health

Wayne Burn-  
ers May Be  
Had for Any  
System — Hot  
Water, Hot  
Air, or Steam.



# WAYNE

## OIL BURNERS

**E**FFORTLESS WARMTH AND COMFORT characterizes this modern oil-burning heating system! The advantages of the Wayne Oil Burners over old, obsolete methods of home heating are widely recognized. The uniform, dependable temperature that safeguards health; the freedom from furnace cares; and the elimination of bother with coal and ashes has won for it the instant approval of housewives. No furnace cares for mother with the efficient Wayne Burner in the basement. It is the last word in dependable, automatic heating service — the most faithful servant in your home.

Let us demonstrate the Wayne Oil Burner for you. An accurate survey of your heating requirements will gladly be made with absolutely no obligation on your part.

## C. W. Pansch

### Sheet Metal Work

Bridge and Ontario Street - Jackson 573

Pansch is a consistent user of newspaper space and finds that advertisements featuring his oil burner stimulate inquiries and serve to focus the attention and interest of those who have already heard about his service through the recommendation of home owners in whose homes burners were installed by Pansch

heating plants in which they are installed Pansch devotes careful study to the special heat transmission problem encountered in placing and adjusting the burner. All adjustments are made on the basis of a flue gas analysis thus assuring an efficient flame, in keeping with the heat requirements of the plant. The electrical controls are another point to which Pansch has given special study so that when he leaves a job he can feel certain that it will perform dependably.

Thus, with all possible trouble anticipated beforehand there is little or no servicing to do, and that which is required is of a simple and inconsequential nature. Pansch realizes the importance of keeping servicing costs down to an absolute minimum and despite the fact that he has this problem well in hand, a careful record is maintained on all servicing work. The form which is used for this purpose was worked out from experience.

Approximately half of the installations which Pansch has made are in warm air furnaces and these are by no means limited to his own former customers. His knowledge and experience in warm air heating problems was, of course, a distinct asset in assuring entirely satisfactory performance of his oil burners in warm air heating plants. Views of some of these successful installations are reproduced herewith.

He believes that a warm air heating contractor who is a thorough heating engineer and who will devote special study to the special problems of oil heating can make a profitable tie-up between his furnace business and his oil burner business. He stresses the fact that only by anticipation and surmounting of the various problems can a genuine and lasting success be attained.

The going is easier for Pansch now that he has established himself as an oil burner expert and that has come only as a result of having painstakingly laid the right foundation.

## METAL FOR PERMANENCE—STEEL

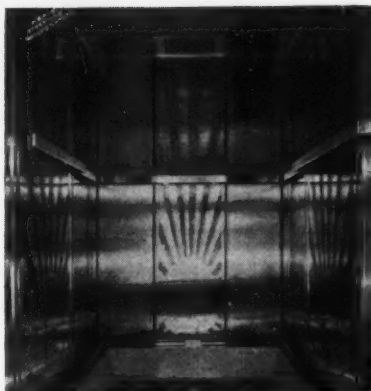


*The pedestrian bridge between the Northwestern Railroad station and the Daily News Building, Chicago, is stainless steel*



*The Chrysler Tower, New York, is to date the outstanding example of sheet metal applied to architecture. The tower is steel*

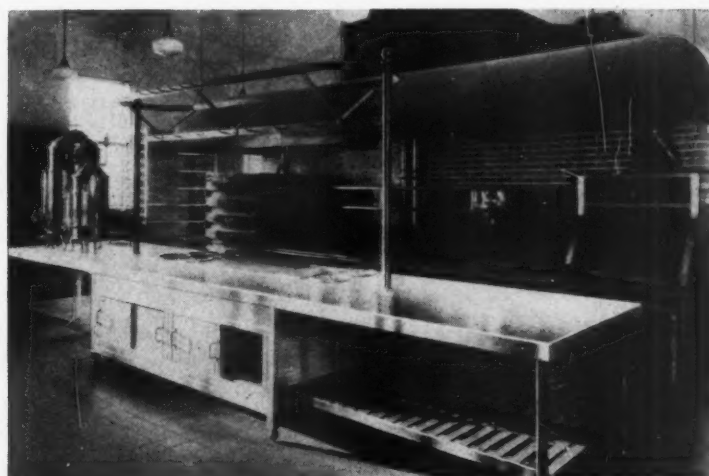
*The elevator cabs of the Mariner Tower, Milwaukee, are built of plain and etched stainless steel. The effect is remarkable*



*The elevator lobby of the Wacker-LaSalle Building, Chicago, is trimmed with steel in modernistic design*

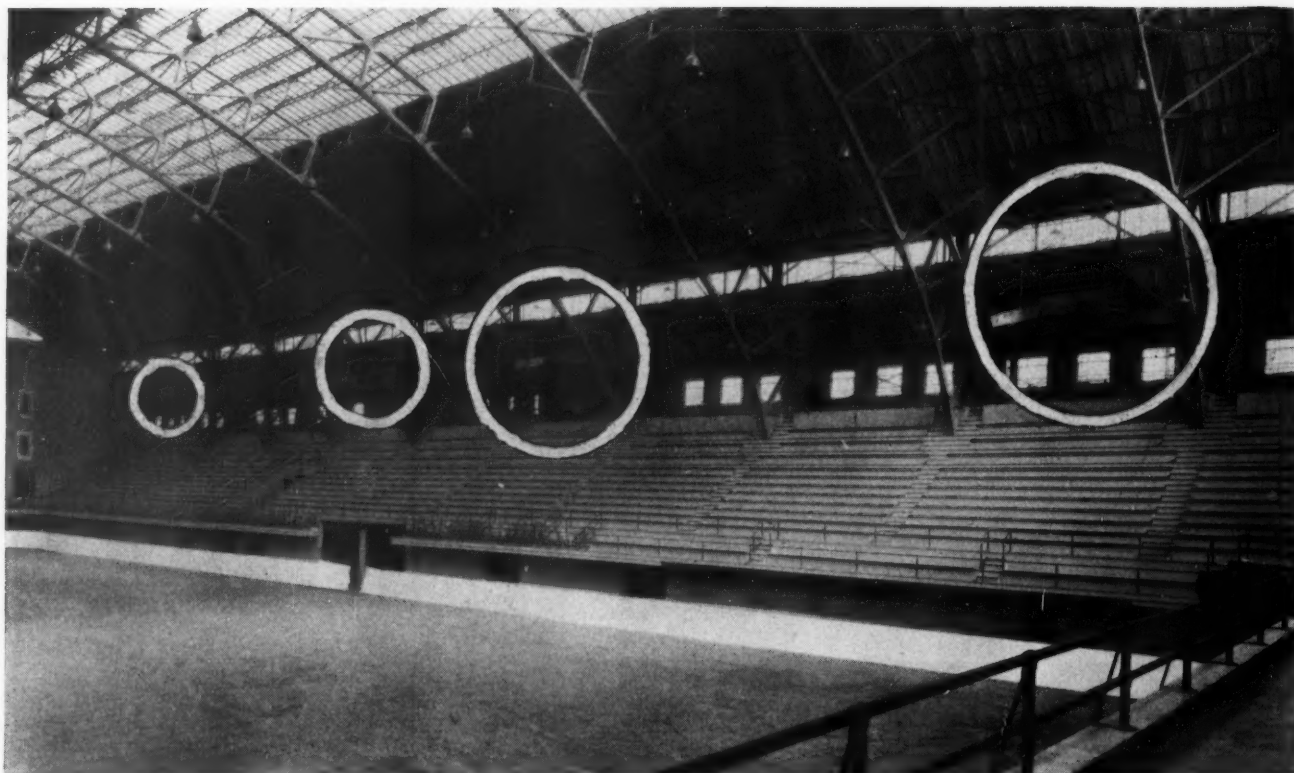


*The Empire State Bank, New York, has an exterior almost wholly glass and steel. The building marks a new architecture*



*Stainless steel has found a waiting market in the kitchen, not only in the home, but in the hotel and restaurant field as well*





Eight gas-fired, warm air heating units, with a total capacity of 7,800,000 B.t.u., heat the armory. There are four units along each side, 64 feet apart

## The World's Largest Gas-Fired Unit-Heater Installation

**A** RMY experts who have inspected Chicago's new 124th Field Artillery Armory have proclaimed it the finest armory building in the country.

Erected for the State of Illinois, by Chicago craftsmen, this huge building becomes the base and home of one of the most noted of peace-military units in the Chicago area.

This structure involved various specialized architectural and engineering problems, and demanded new combinations of the finest of modern materials and equipment. The building represents the combined skill of men and firms whose accomplishments include some of the greatest building projects in the Middle West.

The building is of steel construction with arched, trussed roof hav-

ing its peak 100 feet above the floor. Exterior walls are of masonry and stone facing, measuring 224 feet wide and 356 feet long. The roof is of Federal tile with a glass skylight 36 feet wide running the greater length of the drill hall, on each side of the center of the arch.

Windows along each side of the balcony have a total glass area of approximately 1,780 square feet. The 32 tiers of seats on each balcony are arranged along east and west sides of the drill hall, from north to south, and provide a seating capacity in excess of 10,000 people. The cubical content of the drill hall proper is approximately 6,000,000 cubic feet.

Since over half the total area of this great structure consists of the gigantic drill hall, where battalions

fully equipped and garrisoned carry on maneuvers on horseback, the heating and ventilating problems involved required a most careful and detailed study by architects and state experts. The finished building not only enjoys the distinction of housing one of the largest drill halls in America, but the heating equipment selected constitutes perhaps the largest gas-fired, warm air unit heating installation accomplished up to this time.

The heating figures were based upon maintaining a comfortable temperature throughout the area occupied by the audience in balcony spaces, with no special attention given to the roof or the arena areas.

This in mind, the arrangement decided upon consisted of four L. J.

Mueller Furnace Company Gas-Era gas-fired units on each side. These were placed 64 feet apart in the truss space, in alternate bays. The end units are of 16 sections each, those between of 14 sections each. A total of eight units, or 120 sections, with a combined A. G. A. rating of 7,800,000 B.t.u.

Recirculating ducts are so arranged that air distribution is obtained by drawing air from sixteen 48 by 18-inch grilles in the face of arena walls 10 feet above the floor, 16 feet apart, and 150 feet across the arena, wall to wall. The recirculated air is brought back to the blower located with each unit in the truss area 46 feet above the arena. The air is discharged by the fans through the heating units, and after being warmed is delivered by means of three supply ducts directly over the seating space. Special volume and deflecting dampers were necessary in these ducts to secure the desired air distribution.

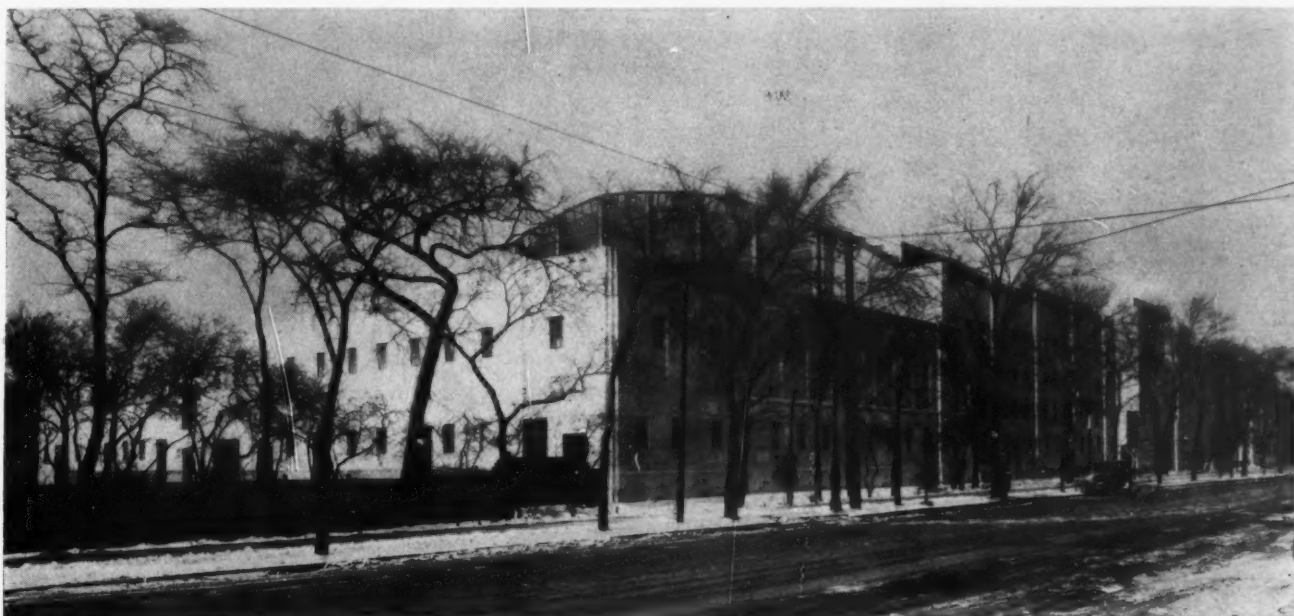
The fans are of 12,000 and 14,000 c.f.m. capacity, operated by direct connected motors delivering a total of 104,000 c.f.m. into the drill hall.

When this system was completed and all adjustments had been made, a smoke bomb test was conducted

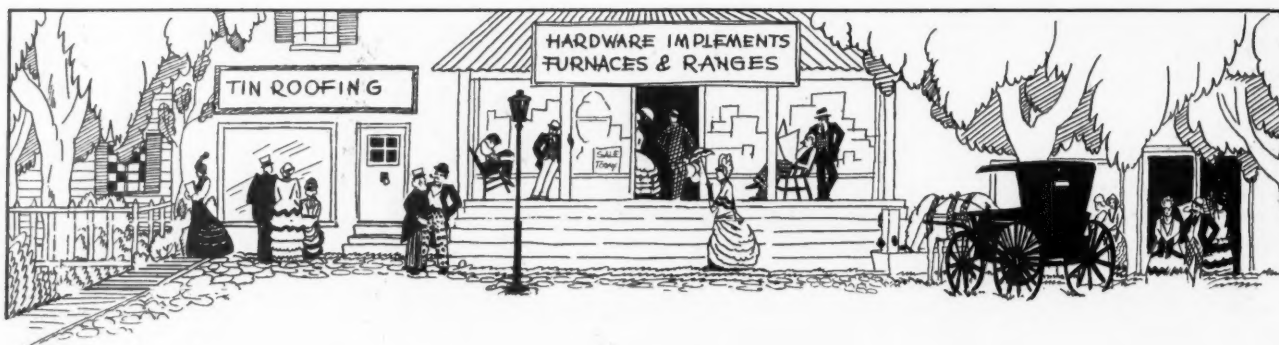
*(Continued on page 110)*



The distributing nozzles direct the streams of warm air out and down over the balconies. Smoke tests showed that the distribution is uniform over the seats and that very little warm air works out over the drill floor. This was exactly what the heating engineers designed the system to accomplish



This is the exterior of the handsome building. The most interesting detail of the building is the heating system, the largest gas-fired, warm air heating installation in the world



# Are Modern Methods Adaptable to OUR Shops?

By BENJAMIN F. JOHN

THE things and methods we thought "the last word" a decade or two ago are fast fading from the picture.

Business has found that old methods were not sufficient and through invention and experience have brought us products that have afforded better and easier living conditions, faster and better transportation and more leisure with its corresponding pleasures.

After the demand for these new things began, business had to learn new methods to enable it to properly conduct its enlarging business. Huge sums of money made mass production possible, and in time the unit price was reduced to the buying level of the general public.

Exactness was compelled in order to know costs and sales prices at all times. Reserve was included in the sales price to insure the payment of dividends to the stockholders. Sales were obtained through entirely new methods, and business learned to tell about its products more intelligently, longer and louder than ever before.

Business soon learned to build for the future by filling the demands of the present quickly, carefully and most efficiently.

This "greater sales through satisfied customers" became its slogan.

This new position became the

means of meeting unfair competition, with a profit.

When we come to analyze these new modern methods and products we find them based on just one thing: Common sense reasoning and action.

Inventing something useful and attractive; producing and selling in large numbers to reduce the price per unit to its lowest possible level, and selling at a profit is our business aim.

Why, then, is it not possible for these modern methods, built upon such common sense reasoning, to be used by *our* trades to *our* profit?

Are we developing business where it was not supposed to exist?

Is the field for our efforts exhausted?

In the old days, the sheet metal, roofing and heating contractor confined himself almost entirely to standard work. Usually he did not do much to enlarge the field of his efforts or the size of his customer list. Possibly at that time he did not need to. But under modern conditions those of us who have tried out some of these methods have found them quite profitable.

The trouble is that too many still cling to the old or half-heartedly try out the new, and thus receive little or no benefit.

Those who have studied our business and its future possibilities and those of us who are anxious to go ahead believe that the field is unlimited. If you reason the matter out from past experience, you must agree that this is so.

Is it possible that we believe there is just so much business, and that when we get our share and perhaps a little extra that we are encroaching on some one else's business?

Is that the reason for cut throat competition, and the many complaints we read about?

Does not the experience of the last ten years prove that it is possible for large roofing and heating concerns, using modern methods, to take over our business and create new fields?

It may be that these concerns did not make the money they expected, or their material and workmanship and results were inferior to ours, *yet their statements show a profit*. Nor must we overlook the fact that these concerns have many boosters in satisfied customers. We have this evidence before us. If this is so, what is going to keep others from entering on the same basis?

What is to prevent large distributors of sheet metal and supplies from starting shops around town and to supply material at wholesale? And what is going to prevent capi-



tal, with competent men in charge, using modern methods from making sales and erecting and installing?

These concerns are looking about now for a means to add to their dwindling sales to take the place of that which is being lost to the ever-increasing corner jobber. Two have already started, how many will follow?

These large heating concerns said that their advertising and high prices for first class installations would increase the business all around. And the statement was proved true. And other manufacturers, when they realized the situation, also entered our field and more will enter our business as it grows more profitable. It is human nature to do so, especially if there is no obstruction from the average trade to make it unprofitable for them.

I should like to ask—can the trade prevent the manufacturer from making money as a dealer? How can this be prevented?

By doing the same things the modern branch offices and shops do.

Is it not to the advantage of every shop to consider its position and realize that the individual shop is

the equal and even better able to sell the consumer, if they will but adopt modern methods?

What is the secret of branch operation success?

It certainly cannot be because they hire the unemployed mechanic at so much an installation, because this method has caused no end of grief, nor is it because they manufacture the material and supply the

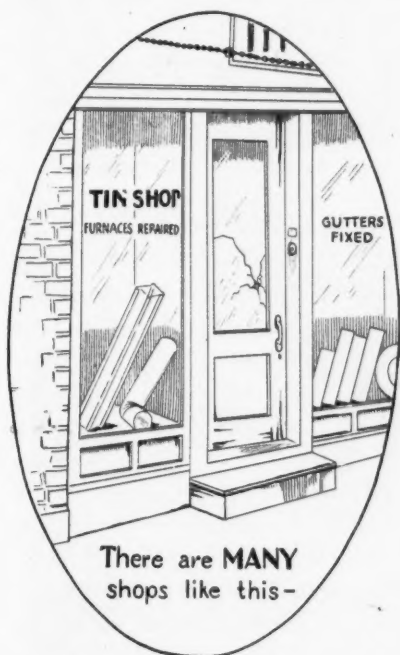
charged with a pro-rata share of the advertising in the locality.

If you think the average branch manager has a "cinch" of a job, consider these facts:

The manager must keep books and records and keep them accurately so that they agree with those in the home office. All payments for written contracts as recorded in the main office must be accounted



There are not enough shops like this. Modern window display, a selection of equipment for any pocketbook or need and a few hours' time arranging the window is a sure means of attracting prospect attention



There are MANY shops like this—

Modern methods have not hit this owner. He cannot expect public commendation when he displays himself in a garb like this

branch at a cheaper price than the dealer can buy, as the freight and warehouse and handling charges must be paid.

Let us consider a well known branch and note what its manager says:

Each branch is allowed just so much money to spend in a year, for which it must produce so much business, at a certain set profit. This compels the manager to work his force to capacity the greater part of the year. If he exceeds the amount of business that he is required to produce, he receives a bonus, but if he falls short of it, and the branch does not pay according to the budget kept at the home office, some one else takes his place.

Each branch is billed with all material used, the labor paid and the expense. And the branch is

for. He must endeavor to make collections from the delinquents, and report on each case. Straighten out each and every complaint. Keep card indexes of each and every job installed; direct his salesmen, and attend to all details of his office, as well as supervise the installations of his contracts, and supply each job with the material required.

Is this not exactly what any first class shop should do, and the average does not do?

The manager is in the same position as the "boss" of the average shop. Both want to make money. If the manager does not, he loses his job. If the "boss" does not he will fail, under this new competition.

Of course the average shop cannot display a full page advertisement, but it can advertise in numerous ways within the reach of

its pocket-book. If every shop in one locality advertised correctly and persistently would not this equal the larger advertising? And if the individual shop stressed the fact that they have been in business in that locality for so many years and offer references, show photo-

office has not been able to gain a foothold.

Modern methods of the branch office have taught a number of shops how to do business profitably, and has kept them on their "toes" all the time.

The branch office show window,

version gas burner. The branch supplies all equipment and assumes the entire responsibility, although the responsibility rests on the home office, far away. Yet with all the prestige of a large manufacturing concern with millions of capital, they have been "licked" many times by the wide awake shop, that studied, planned and knew its business.

This is also true in the sheet metal and roofing business. Many contracts have been won away from the manufacturing interests at a profit by showing samples, a plan, references and a full explanation for the owner.

The average shop owner has a birthright in his business and in his locality. He has earned this birthright by attaining mechanical ability at the bench and giving long and good service. When the private shop recognizes that the office part of business is just as important to his success as the mechanical end, when the owner studies the modern methods adaptable to his business, and as used by all sorts of businesses today, then he can compete with any outside interests and win.



Modern business is tending more and more to quality selling, backed by good reputation. Quality, at a fair profit, is likely to keep you in business longer than selling on price alone

graphs of first class job installed, and learn to sell in the selfsame manner as the branch salesman and at a higher figure for something better and finer, would not their customers and the public prefer them?

That has been done we are told, in those localities where the branch

usually no larger than that of the average shop, is made a salesman; their salesmen are wide awake to every prospect; they install complete outfits and the customer does not have to deal with two or three different firms if he wants a heating system with a thermostat, fan, filter, motor, blower, or even a con-

### **\$50,000 GROSS FROM A ONE-MAN ORGANIZATION**

*(Continued from page 97)*

any other form of advertising, although we have been solicited for radio, billboard, newspaper, direct mail and other forms of advertising.

"Our reason for this is twofold: First, any advertising medium or any advertising method to be successful, must be followed persistently and continuously. Right now we do not have any inclination for an expansion program beyond our present volume, nor do we have any sales organization which such advertising would necessitate for follow-up purposes.

"Second, we had sufficient experience with larger organizations to believe firmly in the policy that individual supervision and effort is needed in order to keep all the loose ends together. Were we to expand

into a volume of business appreciably greater than we are now operating under, we would be unable to give the various phases of the activities sufficient personal attention. Such a situation would require the departmentalization of the various activities with sub-executives for each of these divisions. We are not as yet ready to expand with the anticipation of such necessary moves.

"We acknowledge all communications; including a special letter of appreciation to customers, which thanks the customer for placing confidence in us for a heating system."

### **WORLD'S LARGEST UNIT GAS HEATER**

*(Continued from page 107)*

with all eight units operating, using eight, two-minute bombs. It was found that the direction of air was perfect, making it possible to main-

tain a uniform temperature across the occupied area of the balcony. A positive return air circulation was obtained and a complete smoke haze was observed to extend over the entire arena. The area directly above the arena floor to an approximate height of 15 feet was clear and without air motion.

The Gas-Era furnaces were equipped with controls which automatically cut off the fuel supply when the desired temperature is reached.

This installation was made by the Narowetz Heating & Ventilating Company of Chicago, who have specialized in this field for many years. The Narowetz company has a large number of fine installations in prominent buildings in the greater Chicago area. The operation of this equipment has been the source of much comment from delegations and interested individuals.

# METAL FOR PERMANENCE—IRON

Right: St. John's Hospital, St. Louis, was roofed with galvanized iron in 1910. In spite of a smoky atmosphere the iron is today in first class condition.



Below: The Bundy Apartments, Middletown, Ohio, had a new iron roof in 1909. Today it is good for unknown years more.



Galvanized iron is not as old as some other roofing materials. Nevertheless, it is today one of our most versatile materials and upholds well our industry's slogan—Metal for Permanence.



The Monroe School, Parker, Ind., was trimmed with galvanized iron in 1908. The work consisted of gutters, downspouts, flashings, etc. In spite of severe exposure the metal is today in excellent condition.



The Roanoke plant, Red Jacket Consolidated Coal Co., is all protected with galvanized iron put on in 1909. The iron is subjected to severe conditions.



# Fred Bock, Newark, N. J. Has Specialized for 20 Years SELLING METAL CEILINGS

**A**BOUT the time the twentieth century was being ushered in, a demand for simplification of architecture began to be expressed by home builders and owners of commercial structures. Prior to that change in sentiment, elaborate interiors were quite the thing and the home owner having the most elaborately carved interior was said to possess the most desirable home.

While this demand for simpler things spelled prosperity for many types of building materials, it brought just the opposite effect to the metal ceiling industry. Where the metal ceiling had previously

enjoyed a wide and popular demand, it began to fall off with the coming in of plain plaster, small patterned and plain wall paper and undecorated walls.

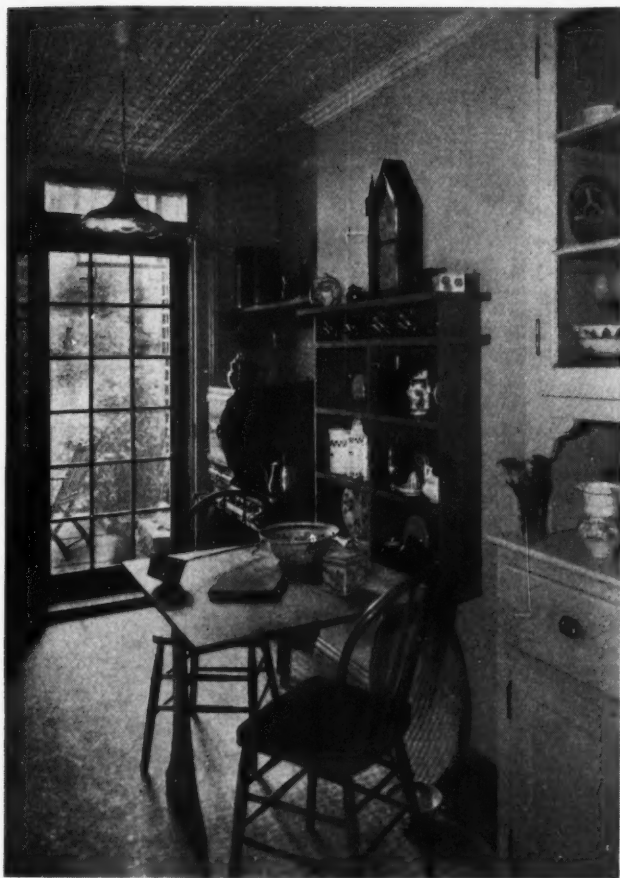
The manufacturers of metal ceiling had catered to nineteenth century taste by making elaborate and deeply embossed designs which, while they sold well before the turn of the century, were passed up by the seekers after simplification. At the same time a feeling that metal ceilings were substitutes rather than primary materials began to go around, so between all these influences the metal ceiling went into the discard.

Nevertheless the metal ceiling undoubtedly did possess some characteristics which made it a very desirable building material. First of all, it was resistive to fire. Second, it was permanent and no amount of settlement in the house could produce cracks across its surface. Third, it provided a very economical means of covering up poorly plastered walls and ceilings and once applied lasted indefinitely. Last, it could be washed and painted and refreshed at little cost and once done over immediately possessed all its original characteristics.

These very evident good traits retained a host of friends in spite of



Metal ceilings are admirably adapted for use in the large rooms of houses built at the end of the last century. It is hard to keep these large ceilings from cracking, but with a metal ceiling this danger is eliminated. Here is a typical room of this kind



Kitchens are a fertile field for metal ceiling sales. Fumes, grease, periods of intense heat and periods of cooling have no effect on metal. In addition, a washing and a quick coat of paint puts the ceiling in new condition

much disfavor. There were, too, many contractors who saw its possibilities and insisted on its use. At the same time, the commercial building or store wanting a new and economical interior continued to use this material for its good qualities. This meant that many contractors who had originally made a specialty of building this material continued to make their living with it.

Just such a contractor is Fred J. Bock of Newark, N. J. Mr. Bock has been a metal ceiling man for nearly thirty years. He contracted in this material when it was widely popular, but of more interest, has continued to find a profitable market all through the years since.

Fred Bock's field is the home. He once did commercial buildings, but quite a number of years back abandoned this type of work in favor of the house. Concentration in this field has developed his sales methods as well as his installation practices so that he is in a position to say what can and what cannot be done in the metal ceiling field.

First off Mr. Bock realizes that

the field has to be cultivated. In his part of the country the metal ceiling has been used so long it has never completely gone out of use. In other parts of the country, he

says, the home owner probably looks on a metal ceiling as something like a cross between a lot of galvanized iron nailed to the ceiling and those deeply embossed metal ceilings which still adorn old saloons or unused store buildings.

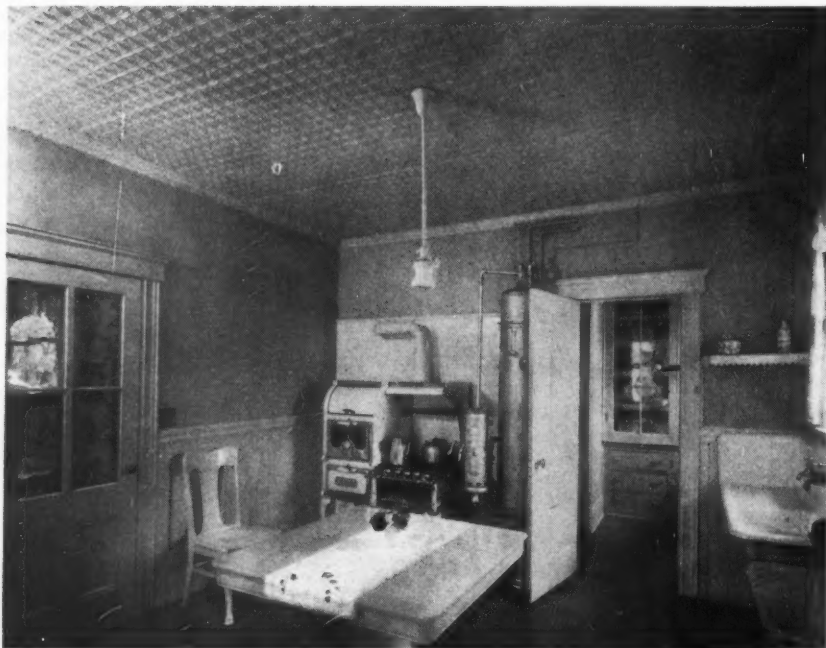
Selling metal ceilings under such circumstances must overcome lots of prejudice first. But the same methods Mr. Bock uses on new customers are applicable to prospects in any part of the country.

One of the best selling points Mr. Bock has discovered in his many years of selling is the fire resistance of this material. Most folks know that metal has considerable resistance against fire. Metal lath for basements is widely used and metal clad fire doors are used in practically every building. So he talks fire resistance. He explains that metal ceilings keep fire and heat away from combustible materials for a long period of time and so keep a fire from spreading until firemen can arrive to put it out.

He has found that there is less sales resistance to using metal ceilings in kitchens, bathrooms, sleeping or sun porches than there is to use in living rooms, bedrooms, etc.



Rightly handled, a metal ceiling harmonizes well with large, open room spaces. Even the most particular owner couldn't find anything wrong with the appearance of this ceiling



Here is another example of a metal ceilinged kitchen: The small pattern appears even smaller in contrast with the large floor area. Mr. Bock has been making such installation for 20 years

So he sells metal for these rooms first. For the kitchen the metal ceiling has a logical companion in the metal side wall. When all the walls and the ceiling are metal keeping the kitchen clean and sanitary becomes as easy a task as though the far more expensive glazed tile were used. The prospect can understand that a plain pattern, painted in attractive colors or shades, can make a very livable room.

The same is true of the bathroom. In these rooms steam from hot water and cooking foods is often present and the effect of steam on plaster is something all persons understand. There is, too the matter of grease in the kitchen. Every housewife understands that metal can eliminate the soaking of grease into the painted wall.

When the home owner has become accustomed to metal in one or two rooms resistance is lowered and the material can more easily be sold for other rooms. One field Mr. Bock has found especially fertile is the old flat or tenement building. Here the owner is usually absent

This ceiling is in a large stair hall. The contrast between the dark woodwork and the light ceiling is pleasing. It is appearance that causes most of the selling difficulty. But work such as this overcomes buyer hesitancy

#### METAL CEILINGS

**HERR METAL CEILING CO.**—Private homes our specialty; kitchen ceilings, \$20 up; bath rooms, \$10; reliable service; guaranteed work. 586 Bergen st.; Terrace 0889.

**METAL CEILING OVER OLD PLASTER.** Bath rooms, \$12; kitchen, \$22 up; dining room, \$25 up. Wm. Hampson, 9 Charles st., Bloomfield; phone day or night, 3083.

**CEILINGS** erected half-day over plaster; no dirt; room, \$20 up; bath room, \$10. Fred J. Bock, 1161 Bergen st.; Waverly 3105.

**METAL CEILINGS AND WALLS.** WM. D. DALY, 866 SANFORD AVE. IRVINGTON. ESSEX 3969.

**METAL CEILINGS AND WALLS.** JAMES V. MAGUIRE 25 Voorhes st., Newark; ph. Waverly 3494.

**METAL** ceilings and side walls erected in homes. Moe Rosenstein, 110 New st.; Market 4421.

The metal ceiling section of a classified ad page. These small ads bring good returns

and his chief concern is for some material which eliminates maintenance. Metal ceilings meet this demand in every respect. Use of the metal removes all necessity for doing replastering, and the metal will stand the hardest abuse without failure. It can be painted easily and cheaply and in addition is sanitary, requiring only washing to refreshen it. In any community where there are these low rental flat buildings, Mr. Bock has found a waiting market for his sales effort.

In connection with this matter of maintenance, the metal is absolutely non-absorbent. Neither water nor liquids penetrate it. This works to advantage in two ways. First the material when in place always remains waterproof and second repainting requires much less painting material. Owners appreciate this latter feature.

Selling metal ceilings for homes today requires one thing and that is small patterned designs. People are not interested in the large patterns, especially when the embossing is deep. The demand today is for as small and shallow a pattern as possible. While this small, shallow



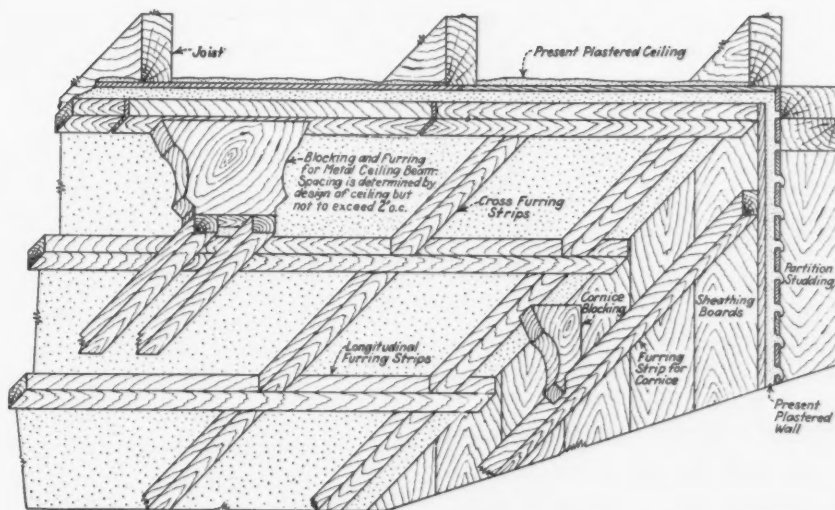


pattern meets the demand for type it brings up some installation problems. The shallow pattern is not as rigid as the deeper embossing. To overcome this, nailing has to be done at more frequent intervals and if the metal is applied to furring strips these strips must be put on at closer intervals.

Applying metal ceilings is an art in itself. For example, Mr. Bock has found that laying ought always be started at the highest side of the room. The next sheet overlaps the first, of course, and with the light against the seam no shadow is cast. The elimination of seam shadows is one thing to always guard against, especially in a house.

At present Mr. Bock applies metal ceiling to three types of support—solid sheathing, old surface furred, and furring on plaster board. This latter is particularly adaptable to modern houses where insulation is usually considered.

Of the three, the solid sheathing is probably the best. It may or may not be the most expensive. In this type of construction the old plaster, if an old house, is taken off and sheathing boards are nailed to the joists. The boards are spaced to care for expansion, but not as widely as under flooring, for the metal keeps practically all the moisture away from the wood. The



Metal ceiling can be applied to old plaster by fastening nailing strips both ways to the joists. The metal sections are then nailed to the strips. The proper construction for a corner turn and a beam is also shown. The smaller the pattern of the metal the closer should be the nailing strips

metal ceiling sections are then nailed right onto this sheathing. This backing provides a very uniform support and eliminates all chance for buckling.

In new houses where insulating lumber is used furring strips, usually  $\frac{7}{8}$  by  $1\frac{1}{2}$  inches are nailed down. The metal sections are nailed onto the strips. In all cases a furring strip has to be placed under the seam.

Where an old surface is to be covered the furring strips are nailed onto the joists. The old plaster does not have to be torn off, but the furring strips must be solidly nailed down so that the metal sections will

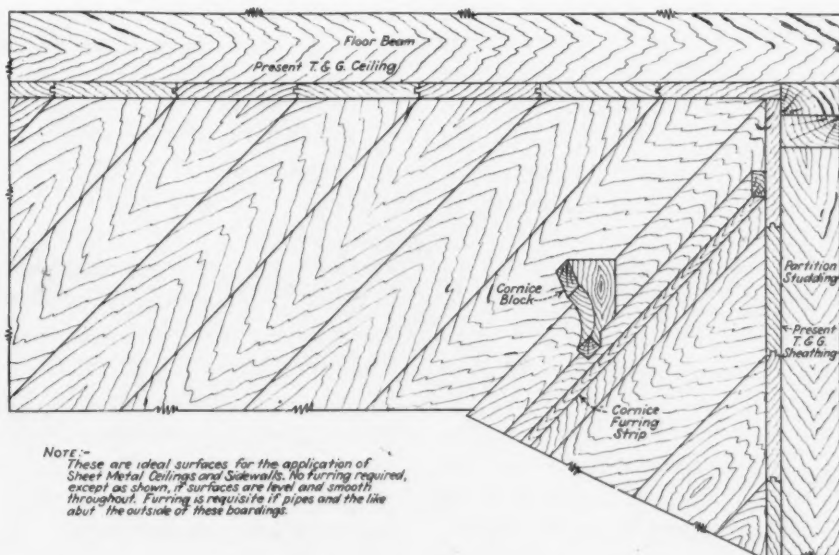
not be subject to vibration or movement. This putting metal ceiling over old plaster is a very economical way to remodel old rooms and in Mr. Bock's community, at least, is very much favored.

Making one's income out of a specialized line of work always demands sales effort. In addition to selling personally, Mr. Bock advertises in the classified columns of his local papers. His advertisements are unpretentious and are usually the same. A sample of one of the advertisements is shown.

While these advertisements serve to keep Mr. Bock's name always before persons building or remodeling, the greatest amount of sales come from personal selling. Long years of specialization have built up a reputation which is known far and wide, but Mr. Bock also keeps close contact with contractors who do remodeling and home construction work. These contractors know his work and when a job of this kind comes up he is called in. At the same time canvassing among persons listed as doing remodeling or building is carried on all the time and brings in much new business. This is personal selling.

"Perhaps in many parts of the country," says Mr. Bock, "metal ceilings are not thought highly of. Nevertheless, this material does

(Continued on page 131)



NOTE:—These are ideal surfaces for the application of Sheet Metal Ceilings and Sidelights. No furring required, except as shown, if surfaces are level and smooth throughout. Furring is requisite if pipes and the like abut the outside of these boardings.

The best base for metal is joined sheathing. With sheathing a continuous, rigid base is available and buckling or sagging can be eliminated with a few nails. While this is more expensive, Mr. Bock recommends its use in every case

# TURNOVER

## And Its Relation to Net Profits

More and more sheet metal and heating contractors are in one fashion or another becoming manufacturers and jobbers. Hundreds of our contractors are making specialties to sell either in their own territory or to distribute nationally.

The National Hardware Association has made an exhaustive study of turnover and has published a pamphlet on the subject. This article is composed of excerpts from that pamphlet and is printed with permission of the National Hardware Association. The author of the pamphlet is Robert L. Hobart.

### What Is Stock Turn?

The word stock turn in itself means the actual receiving and selling of merchandise. For instance, a wholesaler finds that during the current year he has disposed of 10,000 units of a specific article and that the average inventory of that article is 2,000 units. The rate of this stock turn is then computed by dividing the total number of units sold by the average number of units on hand. The result of this computation is 5 which is the rate of stock turn for this particular article. In other words, the stock turn means the movement of stock and the rate of stock turn is the frequency with which a com-

plete movement occurs during a definite period, as one year. The word turnover is also applicable to other instruments in business such as labor, capital, accounts receivable, etc. In this discussion we are considering only the movement of merchandise since it is this factor more than the others which has such a definite influence on net profits.

### Methods of Figuring Stock Turn

In the preceding example, the rate of stock turn was determined by dividing the average inventory of an article into the total number of those articles sold that year. This is perhaps the most accurate method of computation, but it is difficult to use in the absence of a perpetual inventory system or in those lines of business handling a great number of stock items. Two general methods are used by the practical business man and differ only in the basis utilized. The first factor entering is that of inventory. To obtain the most accurate figure and one least effected by reduction movements in stock, an average should be made of the stock on hand for the twelve calendar months. The question arises at this point of whether prices should be figured on a cost or sale basis. For the purpose of this discussion the cost basis has been selected because wholesalers do not generally figure inventory on the mark-up basis.

### A Sample Case

For instance, the John Doe Co. has done a business volume of \$800,000 figured on a cost basis. This volume was determined in the following way:

Inventory as of January 1, 1926...\$100,000

Total purchases during 1926..... 860,000

Total merchandise accountable.... 960,000

Less Dec. 31, 1926, inventory..... 160,000

Cost of goods sold during 1926...\$800,000

The rate of stock turn for this house is then determined by dividing the cost of total merchandise sold during 1926 or \$800,000, by the average inventory, or \$130,000, which gives a result of 6.15 as the rate of stock turn.

### Relation Between Rate of Stock Turn and Overhead Expenses

So far in this discussion no attempt has been made to demonstrate the relationship, if any, that exists between rate of stock turn and operating costs. It is self-evident that there will be a direct saving in interest on capital investment as shown by this simple illustration. Wholesaler A has a capital investment of \$20,000 which bears an interest charge at 6 per cent, making a total of \$1,200. He turns his stock twice a year and has a sales volume of \$40,000. Jobber B has a capital investment of \$10,000 with an interest charge of \$600. He turns his stock four times per year with a sales volume of \$40,000. The saving in interest alone is 50 per cent of \$600, with no decrease in sales volume. Thus it is seen that there is a positive correlation between rate of stock turn and interest on invested capital and that interest varies inversely with the rate of stock turn.

### Expenses Higher with Lower Turnover

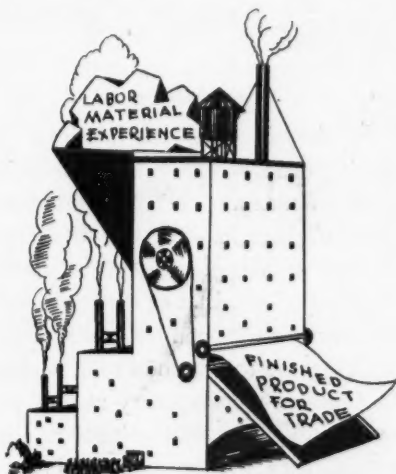
Houses having a rate of stock turn between 5.9 and 8.9 have an average expense for management and executive salaries, 38 per cent less than for houses with a rate of stock turn below 1.9. In Store and Warehouse Salaries there is the same tendency to decrease with the rate of stock turn and houses in the highest group show a 39.8 per cent decrease as compared with houses in the lowest group. Total Salesmen's Remuneration does not respond in the same proportion al-



though there is a decrease of 4 per cent in the highest group as compared with the lowest group. Rent and other Real Estate Charges likewise fails to show a definite response to an increase in turnover, but nevertheless there is a 22 per cent decrease in this item for houses in the highest group. Interest on Borrowed Money and Interest at 6 per cent on Capital and Surplus Employed varies inversely with a change in rate of stock turn. With each succeeding increase there is a proportionate decrease in this item until at the highest grouping there is a total decrease of 65.5 per cent as compared with houses in the lowest group. Total Expense shows a steady and consistent decrease with an increase in the rate of stock turn. Houses in the highest group have an average decrease of 32 per cent, as compared with houses in the lowest group.

#### Effect of Small Increase in Turnover

The influence of turnover on the various items varies and is often



Into the mill of production goes all the things necessary to make the product. Out of the mill comes the product. Then the problem is to sell so that profits are assured. Turnover will in a large measure determine how much can be sold on the least investment

not consistent. According to these figures we have seen that interest charges respond most quickly and in most complete proportion to a change in rate of stock turn while Total Salesman's Remuneration is affected least. But this variation in

The contractor who becomes a manufacturer has to think like a manufacturer. He has to study buying and selling conditions and think beyond his own community. Turnover is one of the things he must consider



affectability is equalized when Total Expense is considered, for here there is a clearly defined decrease with each increase in the rate of turnover. The use of the lowest and the highest groups for purposes of comparison might be questioned by sales manager with an average rate of stock turn who are not interested in the comparison of the extremes. It is necessary, therefore, to show that there is not only a sizeable decrease in Total Expense when comparing houses with an average rate of stock turn of 1.66 with houses having an average rate of 7.30, but that a decrease or increase of one or more stock turn per year has a corresponding effect on the Total Expense Item, other factors being equal.

#### Why Does Turnover Affect Expenses?

These figures in themselves tend to show a definite quantitative relationship between rate of stock turn and Overhead Expenses, but so far there has been no analysis of the cause of this relationship. Let us, therefore, scrutinize each expense item appearing in Table No. 2 in an attempt to determine why it should react to a variation in the rate of stock turn.

#### Capital

In an earlier part of this discussion we have seen why interest on borrowed money and on the capital and surplus employed varies inversely as the turnover. Obvi-

ously it is possible for a wholesaler to cut his interest charges in half by increasing his stock turn 100 per cent, for he is simply doing the same amount of business on half the amount of capital. Another significant point directly connected with interest charges on borrowed money is the capital and surplus employed in the business. Wholesalers today consider capital much the same as a commodity item and one indication of business success is the ability to command, at current interest rates, any needed money. Like its co-partners, land and labor, capital must be utilized intensively in order to derive the maximum benefit of which it is capable. Those merchandisers who are turning their stock but twice when three times is a common figure, are guilty of utilizing their capital only up to two-thirds of its capacity. A common weakness on the part of many wholesalers is their inability to recognize what was formerly hard-earned capital in the new guise of merchandise. Goods in the warehouse are nothing more than actual dollars and cents and yet how many jobbers with slow-moving stocks could endure the sight of idle and non-productive capital slowly depreciating on the shelves day after day.

#### The Quick Turn and Low Margin Fallacy

In the wholesale trade, as well as the retail trade, there is prevalent what might well be called the



"Quick Turn-Low Margin" fallacy. That is to say, merchants believe that it is possible to sell certain lines with a very small mark-up because of the fact that they have rapid rate of stock turn. Within certain very moderate limits this is possible and profitable, but like the drug habit, it has its dangers. Some time ago a well-known soap manufacturer selling direct to retailers employed a clever sales appeal in order to facilitate the sale of his soap to dealers who possessed little or no understanding of selling costs. The dealer was approached by the salesman with the statement that he could afford to sell XYZ soap at cost because of the rapid turnover of 52 times per year. The dealer wanted to know how he could make any money and the answer was by taking his cash discount of 2 per cent on each order he could realize a profit of two per cent times 52 or a total of 104 per cent per year on a nominal investment. In figures it looked something like this: A case of soap cost \$10.00 and sold for \$10.00. On each case there was a cash discount of 2 per cent or 20 cents. Thus with a stock turn of 52 times per year, the merchant realized \$10.40, or 104 per cent profit on an investment of only \$10.00. In reality there was no profit but a heavy loss as is shown by these figures: This merchant had an overhead expense of 20 per cent. Therefore it cost him \$2.00 to sell each case of soap, thus making the total cost to him \$12.00. Less his cash discount of 2 per cent on each case, or 20 cents, his merchandise must return him at least \$11.50 to prevent a loss. But he only sells each case for \$10.00 and on each turnover there is a loss of \$1.80 or a total loss for the year of \$93.60.

#### **Are Sluggish Special Lines Necessary?**

Another condition is present involving slow-moving lines which are carried because the retailer demands it. The supposition is that unless he can get this line from one

wholesaler he will transfer his buying to another house that does carry it and at the same time continue the bulk of his buying from the second house. This places the first wholesaler in a position where he is forced to choose between carrying a slow-moving line with little demand or losing a customer. If it is possible to place a higher mark-up on this line the increased margin will compensate for the slowness of turn. If not, the wholesaler can either reduce this and other similar lines to a minimum or discontinue them entirely. This condition is illustrated by the experience of a shovel manufacturer who was carrying 117 different types of shovels because the trade

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**This article explodes a lot of theory, dear to the minds of some business men. It brings out some points which have not had proper publicity. These points are money makers for anyone who will accept them and put them into effect**

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"demanded it." Upon investigation he found that 92 per cent of this business was localized in 18 types and that the other types could be eliminated with only a slight decrease in volume. Simplification followed with a surprising decrease in production and selling costs and an increase in rate of stock turn. It has been the experience of many wholesalers that they are too often impressed with the "demand" of a retailer for a special line and, as a consequence, their shelves are loaded with items which profitably could be eliminated.

#### **Will a High Stock Turn Cure All Evils?**

It is hoped that the discussion so far has shown the desirability of

having a rate of stock turn consistent with conditions that govern any particular line of business. Rate of turnover is not a panacea for all business evils nor can we say that net profits are directly dependent upon it. It is, however, one index of business efficiency and it does affect the total expense item. We are not always justified in advocating a progressive increase in rate of turnover, for certain limiting factors begin to operate after a certain point is reached. One function of all merchandisers is to place economic goods in the hands of a consumer when he wants it. To make this possible it is necessary for the wholesaler to buy in anticipation of a demand that materializes some months in the future. In other words he gives time and place utility to goods and for this service he receives a percentage of profit. Buying for future demands means the tying up of capital in stock and holding that stock until the seasonal demand appears. This tends to decrease the rate of turnover, but such a decrease for this cause is necessary and justifiable.

#### **Conclusion**

In summarizing the subject of stock turn we have defined this term as meaning the actual movement of merchandise and the frequency of this movement is called the rate of stock turn or turnover. This rate can be computed either by dividing the total goods sold at cost by the average inventory at cost or by dividing the total volume at the resale price by the average inventory at the resale price. Because of the mark-up practice in the wholesale trade it is desirable to determine the rate of turn on a cost basis. The rate of stock turn varies considerably according to various lines of business and within a given line, due to differences in location, buying habits of customers and efficiency of the management and personnel. There is a definite relation between rate of turn and total ex-

*(Continued on page 131)*

# PLANNING THE YEAR'S BUSINESS

**H**OW much money do you expect to make during 1931? How much did you make during 1930? The first question may sound like a foolish one and to many dealers the answer to the second is just as much of an enigma.

How much money you make during 1931 depends upon many factors over which you have no control, but it also depends to a very large extent on your constructive planning of selling and other activities to make the year's operations as profitable as they should be, and upon your ability to adjust your cost of doing business to the anticipated volume of business. Making any profit at all may depend upon such constructive planning.

## Establish a Sales Quota

You can't adjust your cost to suit your sales volume, without knowing what the sales volume will be. While you cannot determine in advance how much you will sell next

year, you can determine how much you will have to sell to break even on the basis of your known operating costs. How does that figure compare with your sales totals for the last five years? How does it compare with the worst year you had during the last ten years?

## Past Experience Your Guide

On the basis of your experience in other years you can estimate your reasonable expectancy during the year to come. Set a figure at which you can make a profit (preferably a greater profit than you made last year) and then let that be the goal toward which you work during the year. That is your 1931 sales quota.

In order to know how you stand at any time, it is important to reduce this annual quota to a monthly basis. Dividing the annual quota by 12 is of course not the way to arrive at the monthly quota. Again your experience in former years will enable you to determine what

the ratio to the annual total should be for each month of the year. When the monthly sales quotas have thus been set, you can tell at the end of each month what progress you are making toward the realization of your annual quota.

## Advertising and Selling Effort

In setting your quota it will perhaps be a good idea to establish a figure slightly in excess of what you estimate you can do and it should be your aim to exceed as much as possible the quota for each month, to offset the months in which you may fall short, nor should you be satisfied with merely making your quota. All of your efforts should be planned and co-ordinated to enable you to exceed the quota figure as much as possible.

In this connection your advertising and selling effort play an important part. Elsewhere in this issue we discussed the idea of appropriating a definite sum to be spent for advertising and how the advertising effort should be co-ordinated with personal selling to achieve its maximum effectiveness.

It may seem advisable to concentrate advertising somewhat in the months when the greatest volume is anticipated. On the other hand it might prove a better plan to redouble the effort during the off season so as to utilize to the best advantage the fixed overhead of your business and to maintain without financial burden sales and shop organizations.

## Systematize Your Selling

It is one thing to set a stiff task for yourself and quite another to carry it out. Yet careful planning of your sales effort may enable you to increase the effectiveness of your

**Table for Determining Sales Quotas for Any Given Month of the Year\***

Jan. .... 2	Jan. .... 3	Jan. .... 5	Jan. .... 8
Feb. .... 2	Feb. .... 3	Feb. .... 5	Feb. .... 8
March .... 3	March .... 4	March .... 7	March .... 9
April .... 2	April .... 3	April .... 6	April .... 8
May .... 2	May .... 4	May .... 6	May .... 9
June .... 3	June .... 4	June .... 8	June .... 10
July .... 4	July .... 6	July .... 10	July .... 15
Aug. .... 5	Aug. .... 9	Aug. .... 15	Aug. .... 20
Sept. .... 8	Sept. .... 15	Sept. .... 20	Sept. .... 28
Oct. .... 9	Oct. .... 19	Oct. .... 25	Oct. .... 30
Nov. .... 6	Nov. .... 20	Nov. .... 28	Nov. .... 35
Dec. .... 4	Dec. .... 10	Dec. .... 15	Dec. .... 20
Total..... 50	Total.....100	Total.....150	Total.....200

\*Courtesy of L. D. Burroughs, Sales Manager, Hall-Neal Furnace Co.

This table of composite monthly quotas was compiled by a number of furnace salesmen on the basis of the actual experience of dealers in different parts of the country

<b>Stock Record Card</b>					
Item .....					
Grade .....			Size .....		
Description .....					
Minimum stock .....			Maximum stock .....		
Date	Put in stock	Material taken	Material used	Material returned	Balance in stock

A simple form for keeping stock records may enable you to save in wasted materials the difference between profit and loss on your year's operations

selling surprisingly. If you are going to get the best possible results from your selling effort you will not depend upon the leads that drift in or chance methods of locating prospects.

A systematic combing of your logical market will enable you to locate the greatest possible number of prospects. This may be done by straight house-to-house or telephone canvassing which gets results if pursued persistently, or some alternative method such as making a special sales drive on some specialty such as humidifiers, heat regulators, fans, new register faces, etc.

#### **Classified Prospect List**

Much time can be saved in canvassing and special sales work if you have a carefully classified prospect list showing the type of heating plant and other useful data on the age and condition of the heating plants. This enables concentration on the most logical prospects and a more specific solicitation based on the known needs of the prospect.

If you do not have a systematic record of customers sold, jobs lost to competition, jobs on which you have done repair work, etc., it will pay you to start such a record based on the information in your own files. Then if you will continually work and build on this list you will find it a constant source of in-

spiration for well directed sales activity.

Intelligent, sales management depends upon intimate knowledge of the market you serve. If you employ canvassers be sure to train them to get as complete and detailed information as possible on every call. Such information, which should include the make, size and condition of the heating plant, will often suggest to you a possible avenue of sales approach at a later date.

A market survey is not necessarily an expensive procedure. You can get complete information about any portion of your market as you need it and much information can be gotten from the coal man and similar sources at no expense to you. You can employ high school boys to canvass sections of the town for you, giving them a few cents for every card turned in with the name, address and other designated information filled out on it.

Systematic selling will enable you to go much farther in the direction of realizing or exceeding your sales quota and will also help you in determining how much business you can reasonably expect to do.

#### **Your Accounting System**

Much of what has been said presupposes the existence of an adequate system of records which reveals your profits and losses from

month to month and shows you how they occurred. Proper control and planning of your business without adequate records is, of course, impossible. Without them you cannot properly determine the ratio between sales and costs, to maintain them in profitable balance at all times.

If you do not have a cost accounting system it is vital that you install one. The system need not, in fact should not, be complicated but should enable you to know the exact cost of materials, productive labor, overhead and profit on every job. Without such a system you cannot possibly know in which direction your business is headed.

#### **Estimating**

Upon your accurate knowledge of costs also depends your ability to make price estimates, with full assurance of how much profit you will realize on every job you handle. No matter how expert you may become in the expeditious handling of labor and materials, your price and your profit depends upon how much these materials and labor cost you. It is important therefore to give careful study to your method of making cost estimates in pricing jobs and arriving at your prices only on the basis of known cost factors.

#### **Stock and Labor Control**

It is common knowledge that the difference between profit and loss on any job or, for that matter on the entire year's operations, may easily be accounted for in the labor and materials wasted out on the job or in the shop. While the principles of mark-up and turn-over apply no less in the heating and sheet metal contracting business, the many cost factors are not as easy to discern as in a mercantile business where standard items are passed over the counter.

Unless a system of stock control is employed which enables accurate determination of all the materials which are used on every job, your otherwise accurate cost estimate will



lead you astray. Not only must an accurate record be kept of materials used but workmen must be held accountable for these materials and their efficient and economical use. It is not difficult to devise a system of stock control which enables not only accurate inventories but is a means of keeping the cost of each job within the figure you estimated.

Of even greater importance is the control of productive labor. One of the most difficult problems of the sheet metal and warm air heating contractor is to keep labor profitably occupied and to maintain a proper division between labor in the shop and on the job. No matter how much idle time is available, effort should be made to conserve time spent on any job so that an excessive amount will not be charged to the cost of any job. Only in this way can you know how much of the labor you are buying is being sold at a profit and how much is being "left on the shelf" so to speak.

## Sell All Labor

When labor is thus efficiently managed you are in a position to find means of putting idle labor to work or of adjusting your labor outlay to fit more nearly the volume of business you are able to secure. The preferable method is, of course, to keep an efficient organization intact and to impose upon the sales department the burden of keeping it profitably occupied.

In slack times when dealers are striving to keep their shop and installing crews intact, there is a temptation to take work at near cost in the frantic effort to meet the payroll without loss. This practice should be shunned. It may seem the expedient course, but it is a practice from which once started, it is difficult to retreat and tends to completely demoralize your normally sound price policy.

In such an emergency it is better by far to let your loyal shop employes earn their salt by going out to sell. In their eagerness to repay your loyalty they may surprise you

with their sales ability. Here is an opportunity to do special canvassing on the various heating specialties you may sell, as well as the cleaning and repair jobs which are always available to the dealer who will go out and look for them.

## Success Depends Upon Intelligent Planning

These are a few of the outstanding problems in management upon which your profits in 1931 depend. Obviously they cannot be elaborated upon in an article of this kind though each of these problems is in itself a proper subject for extended study. If, however, you will give careful thought to every one of them and plan your year's work now with careful reference to them, you are certain to have a more successful year than by persuance of a

haphazard course, waiting for whatever chance or good guessing will bring you.

Such planning gives you a picture of the selling job you have ahead of you. You can certainly tackle the job more intelligently if you know exactly what you've got to do and how and when you are going to do it.

The year is apt to be a good year for those who strive and plan intelligently to make it so.

***You can't be sure of arriving at your destination unless you are sure you are headed in the right direction***

## Workman's Time Report

(To be filled out and returned at end of each day)

**Signed**

Name \_\_\_\_\_

Dav

[illegible]

**I certify time was spent on above jobs as listed.**

## Signed

**To come out on top you have to sell all the labor you buy, and it is important to know exactly how much you are giving each customer**

# WHAT!

## No Dealer Cooperation?

I AM a gum-shoe detective. I've gum-shoed into conventions, into the offices and plants of manufacturers and into the shops and offices of the warm air heating dealers.

I've been after information. Lots of information.

I've been trying to get to the bottom of this "Dealer's Helps" situation.

It's a sad case. On one hand the manufacturer says—"I spend good money to work out elaborate and sound assistance and the dealer won't use it." And the dealer says—"That stuff they send me doesn't click. It costs money to use it; more money than it's worth."

All in all, it is a sad situation.

Mr. Dealer, it takes two to make a bargain, and one-sided co-operation just won't work. There are loads and loads of dealer's helps and co-operations, and they are all yours for the asking. Here is a partial list of what manufacturers are offering you to help sell their merchandise. Window trim, window transfers, signs (indoor and outdoor). Direct to consumer folders, direct to consumer letters, newspaper ads, cuts for your advertising, consumer catalogs, slides, and last, but not least, intelligent and systematic engineering service.

Let's put our heads together and see what these co-operations consist of, how and why they should be used.

First, let us see what we have in the nature of window trimming equipment. The manufacturers of this industry offer their dealers many types of window trimming equipment, consisting of window cut-outs, panels, easels, sticker and window strips. Nearly every manufacturer, whether he manufactures

By **MAT H. FRIEDMAN**

*Advertising Councillor*

a furnace, or an accessory, has at least one type of this equipment for your use. The solution of the matter is either you do not request this class of material, or if you do, you forget to use it. Window trimming material is expensive material. Put it to use.



Window displays take many forms. Color, size and unusual design are all used to get attention. This is a display card

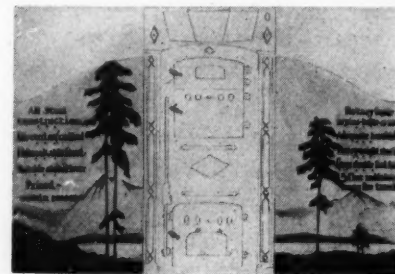
Here is a general idea of the arranging the use of this window equipment. Wash your windows. Cover the window floor with crepe paper or bunting of red, blue, yellow, or any bright color. Set up attractively the unit or units you want the prospect to buy. Then arrange the cut-outs, panels, or easel of your window trim so as to attract the eye. If window strips are used, be sure these strips are placed high enough so they won't detract from the window itself, yet low enough to catch the prospective buyer's eye. Washing the window, covering the floor, arranging the

units and the set-up, you have spent only about an hour or two of your valuable time, and created something that will sell merchandise for you.

Here is a thought: The windows are the eyes and mouths of your place of business. They look out and see a passer-by, a prospect, and beckon and call to him or her, saying, "I am attractive, I have a message for you of health, happiness and comfort. Come in! Buy!"

If your windows do this, they pay for themselves. It is well to remember that part of your rent, in some cases about a third of it, is represented in your window. Put it to work! The manufacturers in your industry will help you!

To impress you with the true value of window trimming equipment and windows, let's glance at a few figures from other industries and fields. On the first of January, 1930, a certain cigarette company paid two dollars and fifteen cents per set for a large enough quantity of window trimming to be placed in practically every worth-while drug store in forty-four states. In round figures, the expenditure for this



This is a large, three-piece, display designed to show a furnace against an attention-attracting background

equipment represented about one million dollars. A cosmetic company had designed for use during 1930 a window trimming set costing over nine dollars and fifty cents

per set. An automobile heater company purchased for distribution in garages and service stations, a panel type window trimming set costing them a little over three dollars per set.

These are facts on which to govern your action. They are facts obtained from successful manufacturers who make successful dealers. Garages, service stations, drug stores, beauty parlors which co-operated with their manufacturers cashed in on the merchandising efforts offered by the manufacturers whose product they sell. It will pay you well to follow their actions.

Through the courtesy of a number of manufacturers, we have illustrated this article with typical window trims which are available. You will note that all of these tell the prospect the idea of better heated homes. They stress health, happiness, ease in operation, low fuel consumption and comfort before the prospective buyer in a most emphatic manner.

Among the reproductions illustrated in this article we have shown



This is a direct mail booklet. Color, arrangement and attention-compelling text combine to give the prospect something to think about

one window trim which has as its subject, "Ridding yourself of the IMPS of heating dissatisfaction." The window trim, the newspaper ads, and consumer folders all tied together giving the same thought. Can you see how this links the

thought of heating to your place of business? Can you see why a passer-by who stops to look at your window and sees your newspaper ad and receives one of these folders will be interested in the unit you have to sell?

Talk the matter over with your manufacturer. Get his co-operation. Change your window displays as often as possible, but be careful that at all times, all equipment is clean and attractive to the eye.

Now, to take the matter of direct-by-mail material. The manufacturers of this industry offer direct-by-mail folders to the consumer; direct-by-mail letters for the consumer; consumer catalogs for mailing. Let me call this to your attention immediately. Such folders, circulars, catalogs, letters supplied by manufacturers to dealers are created by advertising and merchandising men of high type. Many manufacturers have their advertising produced through an advertising agency. Advertising agencies are a group of merchandising and copy men who analyze the field from the dealer angle as well as the consumer angle. They place before the manufacturer plans which they feel will increase business through consumer use. So, when you use a piece of direct-by-mail matter, a folder or catalog, you can rest assured that it carries the appeal which will make a consumer of warm air heating units a buyer.

Some manufacturers supply this material without cost, others charge a small shipping fee. In most cases, manufacturers charge for the printing of your name, address, phone number, and so forth, on these folders.

Speaking of printing folders, let me give you a thought. During the past few months, I have picked up folders in various dealer shops and find that too many dealers use rubber stamps. Here is a piece of advice. Throw away your rubber stamp and pay a couple of dollars for printing. Rubber stamps look messy, do not conform with the type matter in the folders or circu-

lars, and last, but most important, give a very poor impression to the person who receives them. A rubber stamp does not carry the stamp of authority. It looks as if you are only a sub-agent and not a part of a great institution marketing a worth-while unit.

Now, for the distribution of these folders and direct-by-mail matter. Passing folders, catalogs and other matter out of the place of business is all right, but it is too slow and the volume is not there. Take down



This is another folder. This particular piece has five colors on the cover

your telephone book. You are acquainted in this town or city. Check it over and make a list of home owners, of people who can use a warm air heating unit or a warm air heating accessory. Also, watch your newspapers for building permits and the like.

Work your mailing list up as large as you desire. But, regardless of its size, be sure that you get the right type of prospect. Then work out a systematic mailing. Try to see that the prospect receives three pieces of this direct-by-mail matter. You will find that some manufacturers mail direct from their factory, while others ask that you do this mailing. Whichever way it is handled, be sure that the pros-



pect receives at least three pieces of this mail matter.

It is highly important that you keep track of every prospect who enters your store. Be sure that you get his name, address and telephone



Outdoor signs placed on the job are always valuable. This is a typical sign

number and place him on the mailing list immediately. You will find that folders, catalogs, direct-by-mail matter of all types are most effective forms of advertising matter in the warm air heating industry. Use it.

It is important to remember that an inquiry from a folder or direct-by-mail piece should be followed up immediately. A prospect who has inquired may not be ready to buy immediately, but if you get in your sales talk when he is interested, you will have a much better chance of selling him than you will have if you wait a month or two after the inquiry is received. Merchandising is a matter of action, and you must put your own action behind the co-operation offered by the manufacturer.

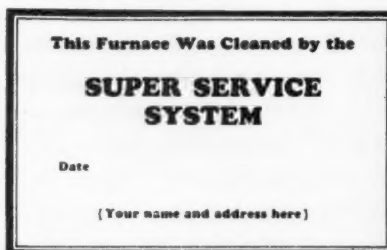
Now, the matter of signs. My gum shoeing brought out that practically 98 per cent of the furnace manufacturers and 45 to 50 per cent of the accessory manufacturers supply installation signs. These signs are of all varieties—metal, wood, parafine paper and fabric. They are for use when installing a new furnace or a unit in a home. Some manufacturers have even gone so far as to supply posts with these signs for erection in the yard of the home or building in which the unit is being installed. Others recommend that they be tacked to the side of the building while the installation work is being done. Others

recommend that the shipping case or container be left at the outside of the building with this sign or signs attached.

Whatever process is recommended by the manufacturer should be used, but by all means, on every job have at least one or two installation signs erected prominently so that the neighbor or passer-by knows that you are doing work in installing a heating unit that will bring him satisfaction. Be sure that the installation sign used by you bears your name, address, 'phone number and possibly a slogan about your business. You will find that the manufacturer will gladly assist you in writing any slogan that you desire to put on this type of sign.

The appeal of installation signs is simple. It tells the passer-by that you know your business, and that you are installing a quality unit for Mr. Jones, Mr. Smith or Mr. Brown. The prospect's reaction is, what is good enough for Mr. Smith, Jones or Brown certainly ought to interest me. I'll investigate. You will find that installation signs are economical, for they can be exhibited and put to work without any space charge.

Now, let's go to the one form of



Another job sign which attracts neighbors

advertising in the warm air heating industry which is the most cussed, discussed and in some cases, disgusting, of all forms of advertising used. That form of advertising known as newspaper. My investigation shows that manufacturers handle newspaper advertising with dealers in several ways.

Some manufacturers allow the use of so much space paid by them as based on the purchase of units,

others, work on a fifty-fifty basis. The manufacturer pays for half the advertising, the other half paid by the dealer, while others have other forms of co-operation on newspaper advertising.

In most cases, the manufacturer is always glad to supply plates for newspaper use. Ads supplied by the manufacturer are usually those prepared by an advertising agency which has surveyed the field and



Direct mail takes many forms. One thing it must do is attract attention. Here is a booklet cover

chosen the strongest points of the unit and what type of service the consumer desires. Each manufacturer, of course, has his own appeal, and it is well at this point to say that most of them have put over their story very effectively.

Newspaper advertising will help you. First, it will build prestige for you. It will put you on the same plane as the automobile dealer, the department store and the many other advertisers and business men of your town or city. Just the other day, a dealer at one of the conventions said, "We used newspaper advertising and did not find it effective. We received very few telephone calls and very few people came in." This, no doubt, is true, but after analyzing the type of copy he ran, let us see if he could expect a raft of telephone calls and prospective customers.

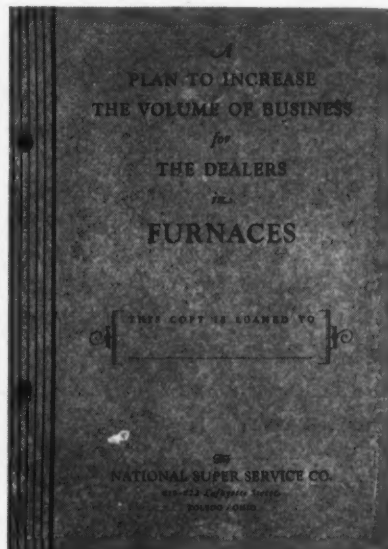
In the first place, no special offer was made, no sale price offered, in

fact, no price was shown. The ad was a general publicity one. It sold warm air heating, it sold a unit which would supply satisfaction service to the buyer, and, it sold the prestige of that dealer. That is the reason he did not get many telephone calls, or attract large numbers of prospects to his store. But you can bet your last dollar that those ads paid for themselves in the prestige they brought that dealer.

Here is a bit of advice. Talk over newspaper advertising with the traveler who represents the manufacturer whose merchandise you are selling. Acquaint yourself with the form of co-operation the manufacturer gives you on this type of advertising. Investigate their selling angle through these ads. Then you will know better what to expect from them.

Under the heading of newspaper advertising might be classed the supplying of cuts for your use when you desire to advertise regularly in our local newspaper, using your own ads, selling your own service and own company.

If you are using this type of advertising, talk the campaign over with the manufacturer. Most manufacturers have an advertising department which will readily and gladly assist you in preparing ads for your use. Get the service of an



Manufacturers go so far as to outline complete selling campaigns. This is the cover of one on furnace cleaning

advertising man of that manufacturer without cost, and you will get better results from your newspaper advertising.

Let's look into the engineering service offered by the manufacturer for a minute. Every manufacturer wants the user of his unit to be satisfied and to be a booster. We all know that some installations require engineering advice. Sometimes this is caused by unusual construction, sometimes by the requirements of the user.

Whatever these may be, the manufacturer is always ready to put at least one engineer on the job and work out the details to everybody's satisfaction. I know of one case where fifteen different plans and suggestions were sent to a dealer on one job. The actual cost of producing these prints and working out the correct installation exceeded the possible profit to the manufacturer, on the unit, by some 20 to 30 per cent. Why did they do this? Because it was real advertising. It was an unusual job put in an un-

usual fashion, and the satisfied owner said: "It's the greatest product ever made to heat a building."

Doctors hold consultations, business executives hold conferences, the President has his Cabinet. All of these are for just one reason, to get the answer to their problem and get it right. By the engineering service offered by manufacturers, you as a dealer, are in a position to install a heating plant and system with the knowledge that it will perform correctly under all conditions, usual and unusual. Do not miss the opportunity of conferring with the engineers and the manufacturers whose units you sell. It is good advertising, good merchandising and proves profitable to you.

Too many dealers say "there *Ain't no* competition as keen as in the warm air heating industry, and there *Ain't no* dealer co-operation or help from the manufacturer." The Warm Air Heating Industry, the manufacturers, dealers and consumers are no different than in any other industry.

The manufacturers want to do everything they can to co-operate and make you more profit and your

## WHY?

**have your  
furnace cleaned**

**HERE ARE THE REASONS:**

**FIRE** often start from accumulations of soot. Why risk your family's safety and your home?

**HEALTH** is imperiled by a furnace filled with soot and dirt. Have this menace removed today.

**MONEY** is wasted when soot and dirt prevents coal from delivering its full heat value. Clean and save.

**DIRT** fills the house and makes house-cleaning an endless task when the furnace is not clean.

**RUST** eats away your furnace in the summer when your furnace is not clean.

**SPECIAL RATE**

Now in effect. Price Goes Up When Fall Comes. Call (your phone number). Let Us Inspect Your Furnace and Tell You Whether or Not It Needs Cleaning.

**Don't Delay  
—Have It  
Done Today**

**YOUR NAME**

Address \_\_\_\_\_
Phone No. \_\_\_\_\_

\* Permanent and Responsible Independent Dealer of U.S. Communities.

Newspaper advertising is expensive. It must get results. Help from the manufacturer's advertising department will pay well every time

**HOW TO CANVASS**

1. **MAP OUT YOUR CITY**  
Obtain a map of your city if possible. If no prepared map is to be had, sketch out your city roughly on a large sheet of paper, indicating streets and blocks. When you have completed a block, cross it off with a colored pencil in order that you may know at a glance just how far along you have gotten with your canvass.
2. **WORK OLD CUSTOMERS FIRST**  
People for whom you have already done work know who you are and, if your work was satisfactory, have every confidence in you. Thus the landing of the cleaning job with them is just that much the easier. Old customers should be given first attention to prevent your competitors getting to them first. When all of your old customers have been canvassed, then you can start in on people for whom you have never done work and, sure that you will have a list of those who have already ordered cleaning jobs to show your new prospects.
3. **ARRANGE A SCHEDULE OF CALLS**  
Plan on 50 calls a day, figuring 10 minutes to the average call and about three hours to be spent daily in canvassing. If you're new in the morning, start at about 9:00. If in the evening, at about 7:00. Give them time to finish breakfast or supper, depend on the time of day. Do not canvass during the afternoon. A great majority will be "out" to a motion picture or on a shopping tour.
4. **Select the home you intend to work the next day and mail an advance letter to all the family.** If they're old customers, you will have their names and addresses. If you have new ones, work for them. Then you can get names and addresses from directories or city records. Mailing is preferable, but if you do not have a mailing list, you can get names from the city records.

(Page 4)

A sample page from a manual on canvassing. Any dealer can get much needed help from such literature

selling easier. They've got to do this to make any money themselves. As a dealer hold up your end of the load.

# THE SALES CONTEST IS THE

"Offer them prizes that they can use and want and they will go out and work their heads off for you"



## If You Use Salesmen Pep Them Up With a SALES CONTEST

By **SID HARVEY**  
*Electrol, Inc.*

**A**NY company that depends on specialty salesmen to put its products in the hands of the ultimate consumer should not fail to employ the best Result-Getter that has yet been devised—SALES CONTEST.

That does not mean that every contest that has ever been held has been a success; but if all sales contests were properly designed and cleverly executed they would never fail, provided they were not overdone. Of course, the campaign manager must know his job and understand the retail salesman's problems, or the best designed campaign will turn into a dismal failure.

Specialty salesmen are the same

the world over, no matter whether they are selling sewing machines, heating plants, ice machines, oil burners, or any other object that requires ONE MAN TO ASK ANOTHER MAN TO COMPLETE THE SALE. They all take their job to be a game, and nothing gives them a greater thrill than the landing of an order that was hard to get.

Most of these men crave excitement. The problem of the sales manager is to give them excitement that will stimulate their efforts along productive lines. There isn't a salesman living who doesn't realize that if he didn't waste so much of his time, he would make a lot

more money. However, a sales manager can talk his head off to his men about the large amount of money they could make if they worked harder, but that alone will not make them take their job more seriously.

On the other hand, offer them prizes that they can use and would like to have, and they will go out and work their heads off. A salesman will strive harder to build up a sales record when working for a prize, however small, than when working only for commissions. You can't go into the home of a specialty salesman without his pointing with pride to some article in it that he won in a sales contest.



# BEST WAY TO STIMULATE SALES

## ELECTROL Air Derby June 15-July 31

**RULES FOR ENTRY INTO ELECTROL AIR DERBY**

**TO ENTER:** In the way to success, as it is now, the old and new methods are being combined. The old way is to sell the product, and the new way is to sell the product by the use of the airplane. The airplane is the new method of selling the product. The airplane is the new method of selling the product. The airplane is the new method of selling the product.

**ADDITIONAL RULES:** The airplane is the new method of selling the product. The airplane is the new method of selling the product. The airplane is the new method of selling the product. The airplane is the new method of selling the product. The airplane is the new method of selling the product.

**PRIZES:** The airplane is the new method of selling the product. The airplane is the new method of selling the product. The airplane is the new method of selling the product. The airplane is the new method of selling the product. The airplane is the new method of selling the product.

Each salesman had a plane whose daily progress was charted on the big flying field shown here. As sales mounted the plane rose higher until the salesman became an ACE. Progress was reported daily

Electrol Incorporated, manufacturers of the Electrol Oil Burner, have discovered the value of national sales contests, and by their use have shown a decided sales increase so far during 1930.

The latest sales contest held by Electrol Incorporated was called the Electrol Air Derby. It lasted for six weeks, starting the 15th of June and ending the 31st of July. July is considered one of the lean months in the oil burner industry, but it was not a lean month for Electrol Incorporated. The results of this contest exceeded the expectations of the officials of the company by a goodly amount. An increase of 47 per cent in factory shipments for the month of July was the result of this campaign, and, coming at the time of the year when a decided increase in business was not expected, definitely proved that this cam-

paign was a success.

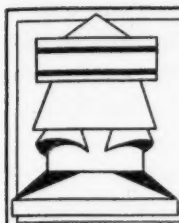
The name of this campaign tied in very nicely with the public interest in aviation. Each salesman who participated in the campaign was called an Electrol pilot. A large broadside, showing the Electrol aviation field, along with the rules of the contest, was sent to every salesman, announcing the campaign. The rules quoted the amount of altitude credits that would be awarded for each Electrol Oil Burner sold. Enclosed with the announcement was a postal that the salesman filled out and mailed in to contest headquarters, stating his desire to enter the contest.

A letter was sent to each salesman who registered, wishing him success, and further explaining the contest. Enclosed with this letter was a small cardboard cutout of an airplane with the salesman's name

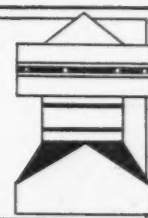
on it. At the same time the letter was sent, an attractive prize book was sent to each salesman, picturing the prizes offered and the credits required for each item, to his home address. The prizes shown in this prize book were of the finest money could buy, and, of course, aroused the interest of both the salesman and his wife, because there were prizes for men, women, children, and articles for the home.

The little airplanes were mounted on the broadside of the Electrol airport, and they gained altitude for every sale made by the salesmen. The first order turned in for credit qualified the salesman as a private pilot. When this first order arrived, the contest manager acknowledged it with a letter congratulating him, and enclosing a private's license that was filled out in the salesman's name.





# GRAVITY EXHAUST VENTILATION



## Garage Ventilation Is a Good Field For Your Selling Effort

ONE of the points that I have tried to bring out both in my articles on ventilation and my articles on overhead has been the fact that adverse business conditions should be met with better merchandising methods and not with price cutting. From the standpoint of the trade as a whole, the most valuable phase of better merchandising lies in the finding or creating of new markets.

Perhaps the least developed of the potential markets of sheet metal work is the field of ventilation. Every season of the year presents ventilating possibilities unrealized by the owner and neglected by the contractor.

One of these opportunities which the present season of colder weather with the closing of doors presents is garage ventilation. In the city of Indianapolis alone there are listed two hundred and forty public garages. This does not include garages listed under other headings such as service stations, automobile agencies, etc. Every town of any consequence has a number of garages, some of which have an acute ventilating problem in which some person or persons are intensely interested.

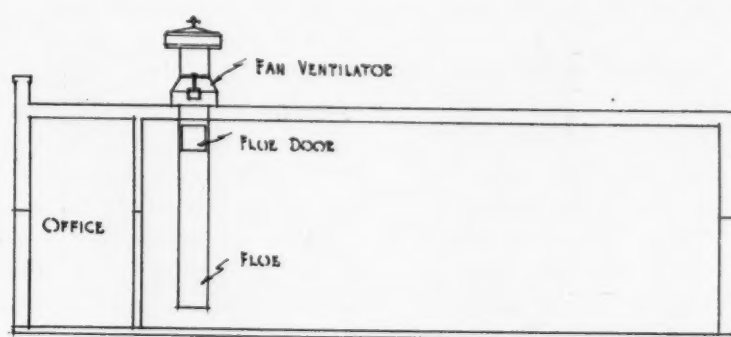
In speaking of garage ventilation I refer to the public garage and not the private garage. It is true that there are many deaths in private

By **PAUL R. JORDAN\***

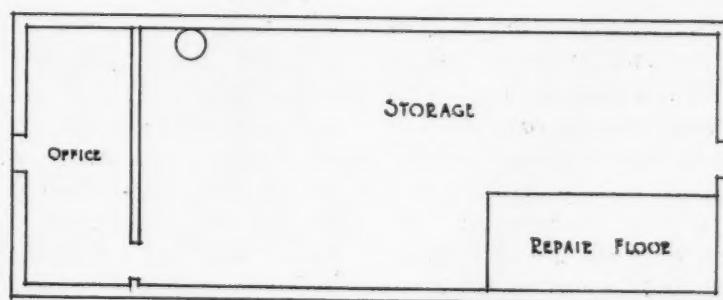
garages due to the inhaling of carbon monoxide gas thrown off by running motors. The private garage is usually a small affair as to cubic contents and it is not possible to design a practical system of ventilation which could be depended upon to remove fumes as fast as

they are exhausted from a running motor. Furthermore, there is no reason why motors should be running in a private garage with the doors closed. The only solution for the private garage problem is to educate drivers not to start their motors until the doors are open, and not to close the doors until the motor is shut off.

### TYPICAL GARAGE LAYOUT FOR FLOE INSTALLATION



SECTION



PLAN

Where poisonous gases are encountered, the ventilator should be hooked into a duct, or a duct system, which takes the air from floor level. These gases, being heavier than air, lie against the floor

*Paul R. Jordan and Company, Indianapolis, Indiana.*



The public garage presents an entirely different problem. It has a high ceiling, wide aisles and ample floor space. If it has stored within it one hundred cars it is not likely that more than two or three of these will have their motors running at any one time. However, there are mechanics working all the time and in cold weather they want to keep the doors closed as much as possible. In this case it is not the customer nor the owner for whom the ventilation is needed; it is the mechanic or workman who has to spend all of his working day inside.

There are two kinds of gas

not too much carbon; in other words you have to have two atoms of oxygen readily available to unite with every single atom of carbon. If you do not have this, then part of the carbon atoms unite with only one atom of oxygen, giving you carbon monoxide. This later condition comes about when you have a rich mixture, which means too much gas and not enough air, or in other words, not enough oxygen.

Carbon dioxide, a gas which you get from a good mixture, is not deadly poisonous, but it is irritating and it seems to develop splitting headaches among workers who must

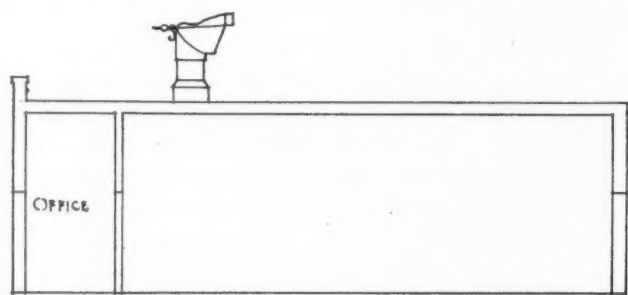
by atoms, is a more vicious gas. It is the result of a rich mixture which you have when tuning up motors and adjusting carburetors, or which you have when using the choke or in using a rich mixture for cold weather. This gas is very close to the same weight as air at an equal temperature, being just a shade lighter than air (0.97, to be exact). It is practically colorless and is not discernible in the atmosphere. It is this gas that is responsible for the numerous deaths by asphyxiation.

There is one fortunate element in this situation as far as ventilation is concerned. The various gases are thrown off together and are easily detected. They come out of the exhaust well diffused, so that if you ventilate for the discernible gases you are at the same time taking care of the carbon monoxide. Inasmuch as these other gases in excess make themselves known by irritating qualities and by smoking up the air, it is a comparatively simple matter to know whether or not your ventilation is adequate.

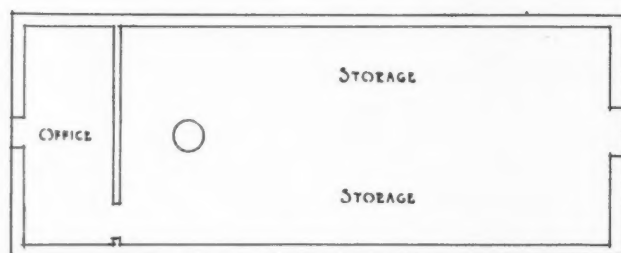
From a ventilation standpoint it would be all right to take the exhaust from over-head. However, the heating problem is very acute in garages due to the fact that opening and closing of doors puts great quantities of cold air on the floors. The fact that some of the mechanics are working on the floor makes it desirable to keep the floors as warm as possible. If the garage is used for storage purposes only, gravity ventilators opening from the ceiling upward are reasonably satisfactory. If, however, mechanics are at work on cars, it is necessary to take the exhaust from the floor.

If the exhaust is taken from the floor it is usually necessary to run a duct down to within a few inches of the floor and on the upper end of the duct attach a fan ventilator. This gives a very good layout, especially as a door in the flue at the ceiling line, opened in the summer time, will take out heat as well as gases. With the door closed in winter, cold air will be exhausted from the floor, helping the heating sys-

### TYPICAL GARAGE LAYOUT FOR OPEN ROOF INSTALLATION



SECTION



PLAN

Where heat removal only is necessary, a roof ventilator, without ducts, will carry off the heat. But such a system cannot be used where motors are run in a closed building

thrown off by the exhaust in great enough quantity to force consideration. One of these, carbon dioxide, is the result of good combustion of a good mixture. The other gas, carbon monoxide, is the result of poor combustion of a mixture that is too rich. A good mixture on combustion will unite two atoms of oxygen with one atom of carbon, giving us  $\text{CO}_2$ , or carbon dioxide. In order to get this good combustion you must have plenty of oxygen and

be in it hour after hour and day after day. While not as vicious as carbon monoxide, it is really the gas which forces attention in garage ventilation. It is a heavier-than-air gas, weighing 1.53 as compared with air at equal temperature. As it comes from the exhaust, mixed with unburned carbon, it is blue and opaque and is readily discernible in the atmosphere.

Carbon monoxide, made up of equal parts of carbon and oxygen

tem and at the same time keeping the air changed so as to dilute the exhausted gases enough to make them inoffensive.

In installing the flue, care must be taken to conserve free area at the floor line at least equal to that of the total flue area. For instance, a 24-inch round flue having approximately 452 square inches of area will have to be raised up at least six inches above the floor if it is free to take air from all directions. If it is backed up against a wall or post which would cut off air from a portion of it, it must be raised proportionately higher.

Inasmuch as the column of air inside the flue is cold, and in addition the carbon dioxide gas is a

heavier-than-air gas, a gravity ventilator will have a hard time furnishing the necessary pull. I know of some gravity ventilators that are giving results satisfactory to the owners, but I, myself, feel safer with a fan installation on a garage where flues are used. If a fan is not used under these circumstances a rotary should be used.

If there are to be no flues used, in other words, if the ventilators can open directly from the roof into the room, then rotary ventilators without fans will be very satisfactory; even stationary ventilators may answer, although I always feel safer with a rotary where no fan is being used.

As to the number and size of

ventilators, I give in my table of recommended air changes for repair garages from ten to twenty changes per hour; for storage garages, six to twelve changes per hour. For storage garages with repair floors, eight to ten changes per hour will take care of it. The engineering service which the ventilator manufacturer makes available to you will come in handy.

Garage ventilation is more acute in winter than in summer on account of the closed doors. Also fumes are more vicious during winter because gasoline mixtures are richer. You will find the garage owner much interested in garage ventilation at this time of year. It will pay you to hunt him up.

### BOCK SELLS METAL CEILINGS

*(Continued from page 115)*

possess characteristics which make it adaptable to many types of construction. What it needs is enough sales effort to overcome prejudice and once this prejudice is overcome the material has so many good qualities that a sale is pretty certain. I have been making a nice living doing nothing else but metal ceiling and sidewall contracting for many years and what I can do a great many others ought to be able to duplicate.

"The field is certainly not as competitive as many others and the profits are splendid. For any contractor who has sales ability and courage to apply it, the metal ceiling offers a splendid field for activity."

### TURNOVER INCREASES PROFITS

*(Continued from page 118)*

penses as well as certain individual expense items. There is a tendency for total expense to decrease with an increase of stock turn. Interest

charges responds most quickly while sales remuneration is least responsive.

In general, each item sold should carry a mark-up greater than the average cost of doing business unless the merchandiser has proof of a lower selling expense or because competition makes it unavoidable. The reason for this is that the practice of allowing profitable lines to carry unprofitable lines is pernicious if allowed to go too far.

As we have stated before, turnover is a willing and valuable aid in the fight for satisfactory net profits; it will reduce total expenses and assist in raising the efficiency of the personnel, but like all valuable tools, it can be over-utilized as well as under-utilized.

### BUILD BUSINESS WITH LETTERS

*(Continued from page 85)*

important part of the sales message.

Study, in fact, analyze, every paragraph of your letter. Forget for a moment that you wrote it.

place yourself in the chair of the reader and see what effect it has upon you. Get the other fellow's viewpoint and then if it satisfies you—"go to it!"

If we will always keep in mind the personal element and realize that your prospect is more interested in himself, his needs and his desires than in the things you sell, you are going to write your letter accordingly and get a ready listener.

Have your sales letters pass through the four stages of Attention, Interest, Desire and Action. Write into your first sentence or paragraph from the viewpoint, needs or wants of the prospect and thus gain his interest and attention. Instead of placing some of that mail you receive daily in the waste basket, keep it and study it. Many of the country's most successful letter writers are sending you an education in the art of letter writing if you only knew it. Try to get into the habit of studying the openings of the letters and circulars you receive; you'll find that many of them follow the practices and principles outlined.

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**We are omitting our usual Pattern, Association Activities, Notes and Queries, and News Item sections in this issue in order to publish as many feature articles as possible. These sections will again be run in the January 5 issue**

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# ARMSTRONG BOILER PLATE FURNACES

Are Distributed By



Bunten Sales Company.....	5419 Market Street, Philadelphia
Central Heating & Mfg. Co.....	1123 West 37th Street, Chicago
Consumers' Plumbing Supply Co.....	5715 Euclid Avenue, Cleveland
Fraser-Johnston Company.....	525 Sixth Street, San Francisco
Heating Supply Company.....	101 E. Lacock Street, Pittsburgh
R. J. Henshaw.....	507 Fitch Street, Elmira, New York
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Ohio Metal & Mfg. Company.....	337 East Fifth Street, Dayton
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Simmons Hardware Company.....	St. Louis
Stockhoff Supply Co.....	107 North Main Street, St. Louis
Grant Totten Furnace Company.....	Canton, Ohio
Tracy-Wells Company.....	175 North Front Street, Columbus, Ohio
Wallace Supply Company.....	3209 Thompson Ave., Fort Wayne, Indiana
Waverly Heating Supply Co.....	52 Union Street, Boston
Wyeth Hardware Company.....	St. Joseph, Missouri
Youngstown Furnace Company.....	630 Marshall Street, Youngstown, Ohio
Chandler Pump Company.....	Cedar Rapids, Iowa
Egyptian Supply Company.....	Christopher, Illinois

**ARMSTRONG FURNACE COMPANY, Columbus, Ohio**

## When You Become a PEERLESS Dealer—

**T**HERE can be only one Peerless furnace with the quality features we have built into its design.

When you have been selected as the Peerless dealer because of your ability to render the kind of heating service Peerless calls for, you get the advantage of a tried and proved merchandising plan to sell Peerless heating service to the home owners of your community.

When you have satisfied yourself as to the superior merit of the Peerless line—boiler plate and cast—and have decided to sell nothing but quality heating service, a Peerless representative will make a market survey of the community you serve and put the Peerless Merchandising plan at your disposal.

Have you the *Right* furnace line?

Write for details on the complete Peerless line and merchandising plan.

**The PEERLESS FOUNDRY Co.**

Warehouse,  
Youngstown,  
Ohio

INDIANAPOLIS, INDIANA  
Where Steel Furnaces Have Been Built for  
63 Years

Bailey-Farrel Mfg. Co.,  
Warehouse Distributors  
at Pittsburgh, Pa.

Note the massive, durable construction of the boiler and radiator. Down draft combustion provides for thorough combustion of fuel gases eliminating soot and smoke.

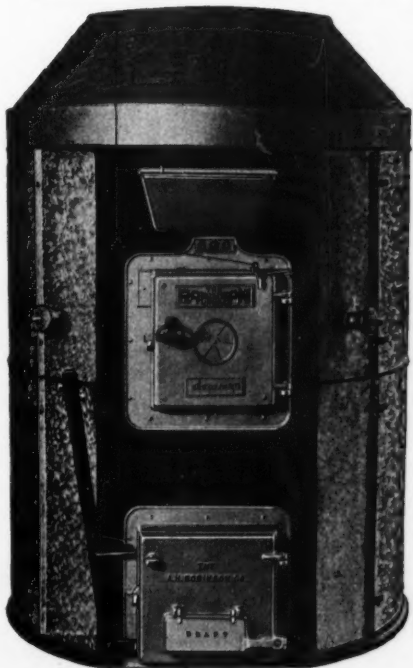


**Peerless Riveted Boiler Plate Furnace.**

Mention AMERICAN ARTISAN in your reply—Thank you!



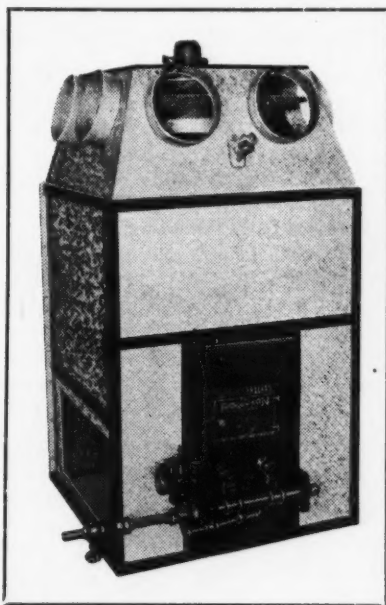
## THE NEW ROBINSON 1931 MODEL COAL FURNACE



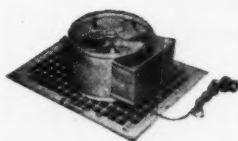
WE realize gas, as fuel, is becoming very popular. Therefore, we have made gas burners standard equipment on this new model. This is a heavier and better furnace. Extra heavy collar. All steel except doors, waterpan and grates. Large fire and ash door, waist high grate shaker, automatic direct draft damper control.

## THE ROBINSON FORC-AIR GAS FURNACE

EQUIPPED with the famous ROBINSON HEAT DISTRIBUTOR Last word in forc-air heating and ventilating. Is entirely automatic in operation. The starting of the fan—lighting and shutting off of gas—time of burning—amount of gas consumed, and complete operation is entirely controlled by a thermostat placed in one of the rooms to be heated. After the thermostat is set for a definite temperature, just enough gas is consumed to keep the temperature the desired degree. Tested and approved by American Gas Association.



## ROBINSON EVERYDUTY PORTABLE FAN for that hard to heat room



SUCKS warm air from the furnace and forces it into room. Just the thing for that installation with one hard to heat room. Fine for hustling heat to certain rooms on cold nights. The Robinson Everyduty Portable Fan can be used on either a floor, baseboard or wall register. Painted green. Can be sent Parcel Post since it weighs only 10 pounds packed.

Put a Robinson Heat Distributor in your window; also a heat hustler. Learn about the profit possibilities in gas heating. Write now for details and name of nearest distributor.

THE A. H. ROBINSON CO.

MASSILLON,  
OHIO

# Why Let Others Get this Profit?

As a heating specialist, you are the logical man to sell and install heat regulators—you are the man who is entitled to the big additional profits the MASTER Heat Regulator brings.

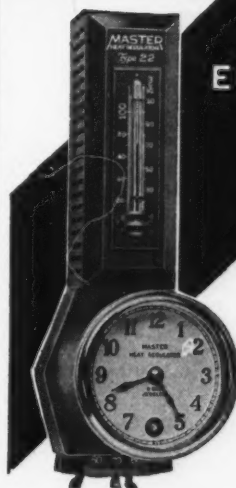
Yet others are going right into your community, selling regulators to your own customers, reaping the rewards that could be yours.

## MASTER HEAT REGULATOR

### FULL ELECTRIC



Full Electric  
Model without  
Clock control \$55



Full Electric  
8-Day Jewelled  
Clock Model \$80

With this dependable regulator you can easily get a big share of the business that is now going to them. The MASTER acts instantly upon changes of one degree or less. Full Electric, nothing to forget.

These low prices get the orders

Type 22, Full Electric, with clock control by 8-Day Jewelled Clock, \$80. Plain model, full electric, without clock, \$55. Made by the manufacturers of the MASTER Gradual Control Heat Regulator. *Get our proposition and discounts to dealers. Write today!*

**WHITE MFG. CO.**  
2362 University Ave. St. Paul, Minn.

# Let the BERRYMAN OIL BURNER

*Help You to Greater Profits  
During 1931*

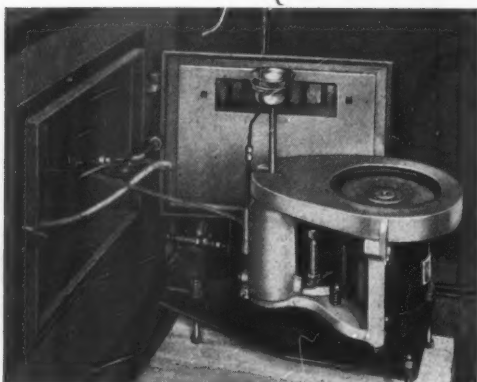
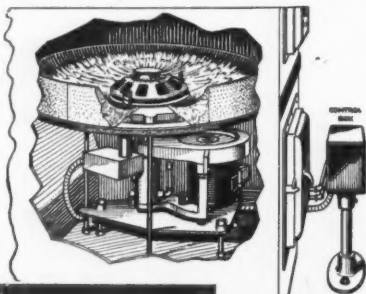
**Y**OUR customers want oil heat—clean, efficient, automatic heat—as provided with a Berryman. Why not cash in on this demand? A highly efficient burner and an attractive price comprise a combination you can't beat as a profit maker. And besides the profits on burners, your oil burner sales contacts will lead you to many a profitable repair or replacement job.

The *Berryman Rotary Oil Burner* is a marvel of simplicity. There are only two moving parts. It is easily installed in any type of furnace and is just as easily removed for inspection without disconnecting a single part.

The *Berryman Gun Type* is automatic in operation; economical; silent; nothing to get out of order. Guaranteed for two years, will give a lifetime of service.

If you act promptly to secure the Berryman franchise you can enjoy extra profits you are missing now, with little additional effort. Every customer—new or old—is a prospect for a Berryman. Each installation will sell several more.

You may order one *Now* and if within 30 days you are not satisfied—return same to factory and full amount will be refunded at once.



**A Quality  
Burner for  
only**

**\$139.50  
(Rotary Type)**

**\$160.00 for Gun  
Type Burner**

**complete  
with all  
Controls**

**F. O. B.  
Chicago**

*Send the coupon for complete details  
about our attractive dealer proposition.*

## Berryman System of Oil Heating, Inc.

Manufacturers of Oil Burn-  
ing Equipment Since 1918

1300 West Washington Boulevard, Chicago, Ill.

I am interested in learning more about the Berryman and details of your dealer plan.

Name.....

Address.....

Town..... State.....

## WHITNEY *Lever* PUNCHES:

**Time Saved in the Shop  
with Good Tools  
Is Money in the Bank**

### No. 1—Heavy Duty Punch

The punch for tough work. Length 34 inches. Weight 22 pounds, well distributed to correctly balance the tool. Capacity  $\frac{3}{8}$  inch hole through  $\frac{1}{4}$  inch iron. Heavily reinforced for strains. Punches and dies  $\frac{1}{8}$  to  $\frac{9}{16}$  by  $\frac{1}{64}$  inch. Insertable pipe handles.



### No. 2 Punch—The Leader for Over 20 Years

This is the punch that made the Whitney line famous. It is preferred by thousands of men for accurate and quick punching. Depth of throat,  $1\frac{11}{16}$  inches. Capacity  $\frac{5}{16}$  inch through  $\frac{1}{4}$  inch iron or equivalent. Extra punches and dies,  $\frac{3}{32}$  to  $\frac{1}{2}$  inch by  $\frac{1}{64}$  inch.

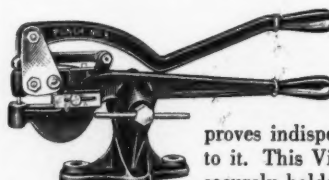


### Whitney Channel Iron Punch

Every part of the two punches are interchangeable. Length, 23 inches. Weight,  $16\frac{1}{2}$  pounds. Punches to center of 4-inch Channel iron. Capacity,  $\frac{1}{4}$ -inch hole through  $\frac{1}{4}$ -inch iron. Same sizes of extra punches and dies as used in No. 2 Punch.



*A Companion to  
No. 2 Punch*



### Whitney Handy Vise

Here is an item that costs very little but proves indispensable, once you get used to it. This Vise is handy, practical and securely holds any of the Whitney Lever Punches. Well made of the high-grade Malleable Iron. It bolts to bench or can be bolted to plank and used portably. Weighs only 5 pounds.

### No. 8—Close Corner Punch

The No. 8 Close Corner Punch shown in the vise has a capacity  $\frac{1}{4}$  inch through  $\frac{1}{8}$  inch iron. Weight  $7\frac{1}{2}$  pounds. Length  $18\frac{1}{2}$  inches. Depth of throat 2 inches. Upper lever does not throw back to right angles. Simple, easy and quick punch changing. Side gauge with marked fractional inches. Sold with or without Vise. Punches and dies  $\frac{1}{16}$  to  $\frac{7}{16}$  by  $\frac{1}{64}$  inch.

*Write for Complete Catalog*

**W. A. WHITNEY MFG. COMPANY**

636 Race Street

Rockford, Ill.

Order from  
Your Jobber



Look for This  
Trade Mark

*The Choice of OVER 4000 Satisfied Users*

Mention AMERICAN ARTISAN in your reply—Thank you!

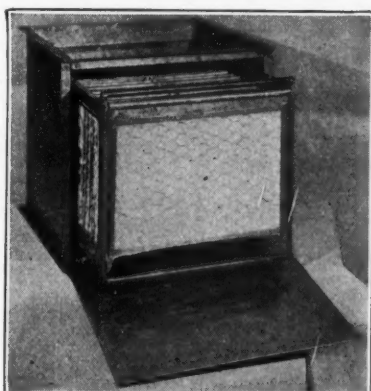
NOW with the

*Compact*

**FURNACE FILTER**

you can guarantee

**ABSOLUTELY CLEAN AIR  
ON EVERY BLOWER JOB**



Heretofore you have been able to provide warm air systems with every modern necessity—except *thoroughly filtered air*. The "Compact" filter makes perfect filtration practical.

**LOWEST AIR RESISTANCE  
LEAST SERVICE ATTENTION**

**T**HE Compact Air Filter is of the fabric or dry type. The cleaning medium is "Filterdown" and while it thoroughly removes all impurities from the air it has the very lowest resistance to air flow.

The design of the "Compact" provides unusually large filtering area which cuts down resistance and greatly increases the useful life of the filtering medium.

These two features are big advantages in a filter for mechanical warm air jobs—plus the fact that renewing of the filtering element is simple, quick and almost negligible in cost.

Because of the extensive filtering area the average job will require change of "Filterdown" but once a season.

**WRITE TODAY FOR FULL DETAILS**

The Compact is simple in design and construction.

The reasons **WHY** it is **LOW** in resistance—**WHY** the fabric has **LONG LIFE** (will not clog up and cause added resistance) are clearly and fully given in our data sheet and folders. Send for a sample of "Filterdown" and test its low air resistance.

The "Compact" Filter fits directly above the blower



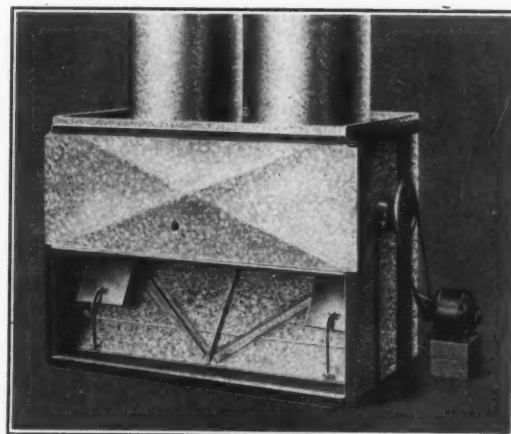
**VENTILATING ENGINEERS—WRITE FOR VENTILATING  
BULLETIN ON THE COMPACT**

**INDEPENDENT AIR FILTER CO.**

29 South Clinton Street

Chicago, Ill.

## BRUNDAGE FORCED AIR SYSTEM



Outlet side of the new Brundage Forced Air System showing closing position of damper when fans are operating.

**T**HE above illustration shows the "D" series. This model is equipped with a large opening for gravity flow when fans are not in operation.

**COMPLETE  
EFFICIENT  
QUIET  
COMPACT**



"N" series designed for straight mechanical work without gravity damper.

**The Brundage Company**  
KALAMAZOO, MICHIGAN

Mention AMERICAN ARTISAN in your reply—Thank you!



# REX

## Gas Warm Air Furnaces

HOME owners are demanding the increased comfort and convenience afforded by gas heat—the only really clean heat. To burn gas successfully and efficiently the furnace must be designed for burning gas.

THE REX GAS FURNACE is a product of 37 years of experience in the manufacture of Gas Fired heating equipment.



No. 380  
Rex Attachment

This new improved REX for either forced air or gravity is a surface combustion, tubular furnace, designed to burn gas economically and efficiently, the white arrows show the long detour in fire travel of the burned gas to the flue.

The Rex Gas Furnace Units are manufactured in two sizes and will burn natural or manufactured gas. There is no better heater on the market for factories or store rooms, used without the casings, as the tubes in these Units circulate the heated air throughout the building, giving an even temperature.

Rex Gas Attachments are designed to give the home owner the best possible results from the use of gas in connection with a coal furnace. They can be connected to any make of coal furnace on either side or one on each side if needed. You can burn gas or coal or both at the same time.

Cash in on the increasing popularity of gas heating by furnishing Rex Gas Furnaces.



No. 290  
Gas Furnace



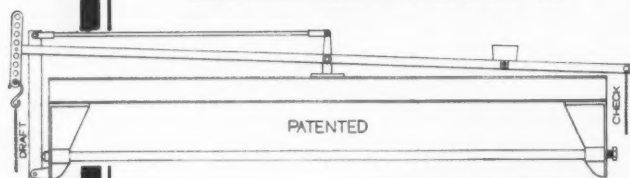
### CALKINS & PEARCE

203-05 East Long Street, Columbus, Ohio

Manufacturers of Rex Gas Furnaces, Gas Attachments, Gas Furnace Units, Factory and Garage Heaters

## At Last---

a purely mechanical  
non-electrical  
HEAT REGULATOR



Dealers Price \$20.00 Ea.  
Quantity Discount. F. O. B. Youngstown

Can be profitably installed at  
a price well within the reach  
of any home owner.

Here is an efficient and economical furnace regulator that is entirely mechanical—no expensive electrical devices, wiring or motor. The expansion bar maintains the correct bonnet temperature by expanding or contracting and mechanically opening or closing the draft and check damper. Its action is positive and dependable.

The Noll Furnace regulator is simple in construction—nothing to wear out or get out of order. It is guaranteed to outlast the furnace!

Let us ship you a sample Regulator with installation instructions on 30 Days free trial. Write for further information Today.

### NOLL REGULATOR CO.

YOUNGSTOWN, OHIO

143 West Earle Avenue

Special  
Off-Season  
Prices

on repair castings  
for Mahoning &  
Wright Heaters, on  
which we specialize.

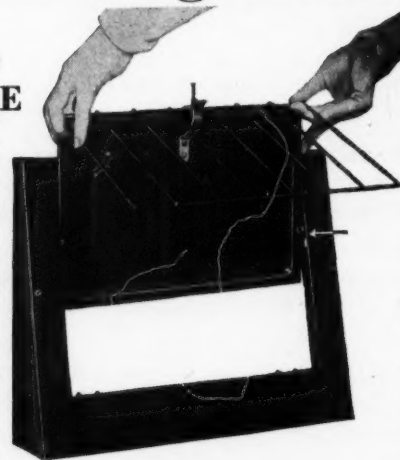
## Ku-No Registers

in

attractive

TWO-TONE  
COLORS

MANY other dealers are increasing their sales and profits with KU-NO Registers. The pleasing TWO-TONE COLOR FINISHES help sell modern warm air heating. The distinctive tone combinations harmonize with modern interior decoration. Show your prospects KU-NO, the newest and fastest selling register on the market.



Face Easily Removed for Cleaning  
Wing Locks in Any Position

The face of the KU-NO register is removed by simply applying a slight pressure of the thumbs against the top of frame. It snaps in and out—there are no screws—no springs. The women folks will welcome this feature. They can remove, clean and replace face in a jiffy.

The locking device is another patented feature. It holds the wing in any position without jar or vibration. Notice also the free air capacity of the KU-NO register. It is as near 100 per cent as possible.

KU-NO has more worthwhile features than any other register made—order KU-NO TWO-TONE REGISTERS from your jobber now for more and better sales. Send us your jobbers name.

### KU-NO REGISTER COMPANY

116 North Second Street

ST. LOUIS, MO.

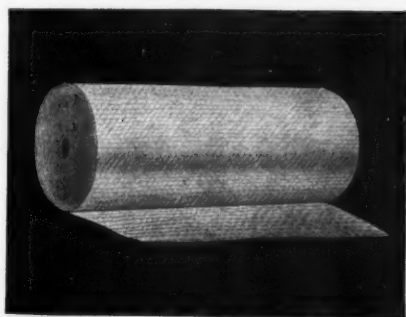
Mention AMERICAN ARTISAN in your reply—Thank you!

## One of Many Beautiful Indianapolis Homes

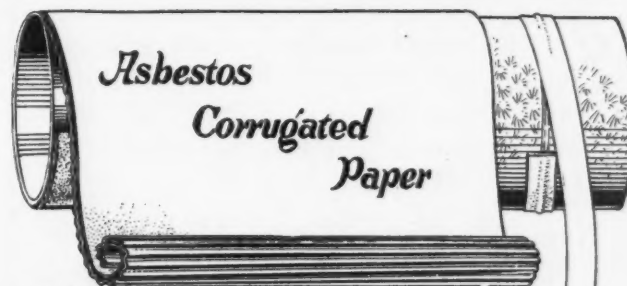


*The Hathaway Simmons Residence*

AIR-CONDITIONED BY KRUSE COMPANY • INDIANAPOLIS



*Asbestos  
Flat  
Paper*



*Asbestos  
Corrugated  
Paper*

## SAL-MO ASBESTOS COVERING

*—for Warm Air Pipes—*

SAL-MO Flat Asbestos Paper is the standard asbestos pipe covering used by warm air heating men for best results. It comes in all standard weights and widths. Specify SAL-MO from your jobber—you can get it in 10, 12, 14 and 16 lb. weights. SAL-MO Corrugated asbestos paper is the preferred brand of corrugated paper used by the men who command the highest prices for their installations.

Sal-Mo Asbestos Elbow Segments and Sal-Mo Pipe Joint Tape make neater, cleaner jobs.

Besides this you save time, money, sawing, and material. You pay less for pipe covering in this form.

Sal-Mo Elbow Segments come in cartons containing 25 sets or 100 sets. Made for 8 in., 9 in., 10 in., and 12 in. elbows.

Notice illustration showing Pipe Joint Tape—it's just the right width and packed in handy-to-use form.

*Send the Coupon Today  
for Free Samples*

**SALL MOUNTAIN CO.**  
176 W. Adams Street Chicago, Ill.

*Asbestos  
Pipe Joint  
Tape*



SALL MOUNTAIN CO.  
176 W. Adams St., Chicago, Ill.  
Send us samples of Sal-Mo Asbestos Paper, also Elbow  
Segments and Pipe Joint Tape.

Name .....

Address .....

City .....

State .....

Say you saw it in AMERICAN ARTISAN—Thank you!



## A New PEXTO Beading Machine

**S**HEET metal workers know that any new Pexto machine is bound to be far in the lead with features that make it easier to do BETTER WORK in LESS TIME.

### New 622 Deep Throat ALLINWON Rotary Beading Machine

Furnished with Standard and five pairs of rolls as follows: Turning, largest Wire No. 11 gauge; Burring, widest flange  $\frac{1}{4}$ "; Wiring, largest wire No. 7 gauge; Ogee Beading and Crimping Rolls, including combination gauge.

1. Horn is steel.
2. Lower Shaft bearings are bronze bushed.
3. Gears are machine cut from solid steel and enclosed in heavy one piece frame.
4. Rolls may be driven from upper or lower shaft—forward or reverse drive.
5. Shafts are key seated to prevent slippage. Rolls are held to their arbors by screw nuts.
6. Steel crank. Adjustable for short or long leverage.
7. Two piece adjustable forged crank screw.



**THE PECK, STOW & WILCOX CO.**  
Southington, Conn.



**SOMETHING**  
*New*

**DIFFERENT  
ATTRACTIVE  
PRACTICAL  
EFFICIENT**

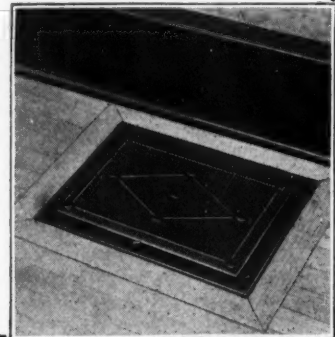
## DEFLECTO FLOOR REGISTERS

New beauty, greater free air capacity. An efficient register plus a shield which protects walls. An ornament to any room—does not become dust laden as it has no shutters.

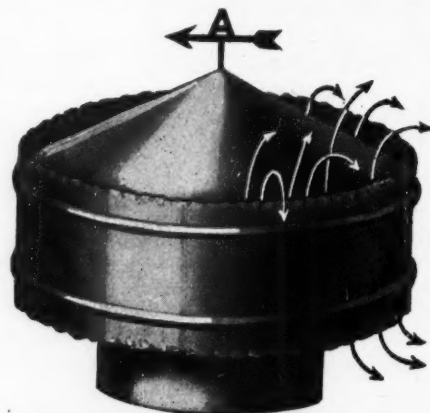
The MOROCCO finish is specially made for the DEFLECTO REGISTER. This finish is unlike any other register finish. DEEP BLACK, OAK BROWN, DARK GREEN and MOTTLED BRONZE are stock colors. Simple practical adjustment. When open the shield is protected by a spring support.

Write today for full details and circulars

**JOBBER WANTED**  
**GENERAL**  
**PRODUCTS CORP.**  
3607 Orchard Avenue  
Indianapolis, Ind.



## Aeropull STORM BAND VENTILATOR



THE design of the Aeropull Ventilator makes it free from choking down tendencies. It is designed especially for fan work. The storm band on the Aeropull is 50% greater than standard and the free exhaust is 50% greater also.

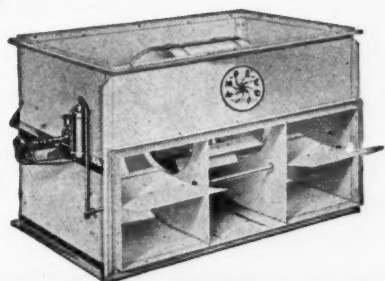
*It is a more durable, larger and more efficient ventilator at a lower price*

WRITE FOR CATALOG AND PRICES TODAY

**PAUL R. JORDAN & CO.**  
630 South Delaware St. Indianapolis, Ind.

Mention AMERICAN ARTISAN in your reply—Thank you!





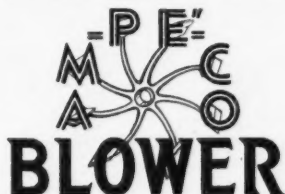
## The ACE of All Forced Air Circulators for Your Heating Jobs

AM-PE'-CO has revolutionized air circulator construction and efficiency. The only blower that positively provides a fully balanced distribution of air to the rotor—vital to proper blower operation. Patented improvements assure positive, uniform heat delivery. Mechanically controlled; compact; quiet; non-leaking ring oil bearings. A big business builder and profit maker for the dealer.

Built with or without dampers which open automatically when the blowers stop, for gravity circulation. Get more blower business for yourself—write us for literature on Am-pe'-co Blowers, and full information.

AMERICAN MACHINE PRODUCTS COMPANY  
Marshalltown, Iowa

For 15 Years Manufacturers of Precision Products



## TWO TAYLOR'S BRANDS

to Tie to

First in the minds of sheet metal men is our famous HAND MADE roofing tin—the highest quality, longest lived roofing tin in the world, the old "TAYLOR'S" Old Style, known since 1905 by the new name.



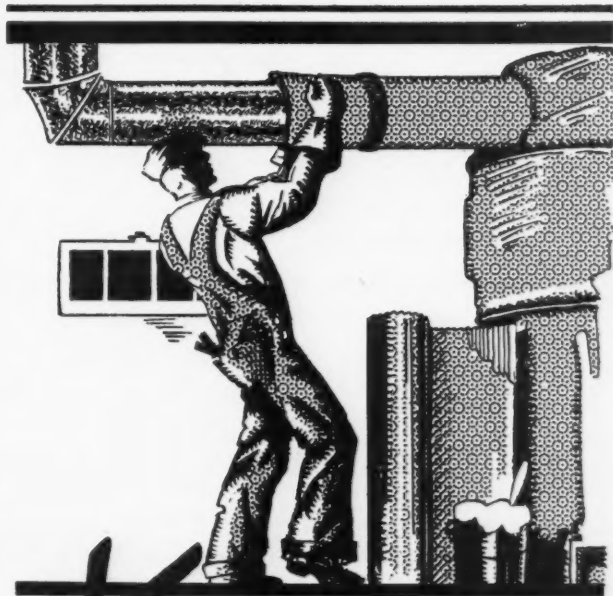
Now we have gotten out a New Tin, but the best machine made plate ever produced, for those who want to pay less. This is known as

**Taylor's Extra Coated**  
40 lb. Copper Bearing O. H.

Ample stocks carried by all distributors.  
Ask them for TAYLOR'S.

**N. & G. TAYLOR COMPANY**  
CUMBERLAND, MARYLAND

Headquarters for Good Roofing Tin Since 1810



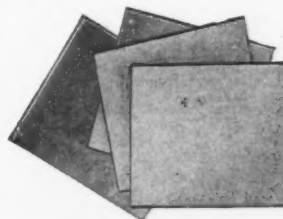
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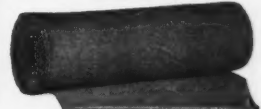
You can greatly improve the appearance and increase the efficiency of your warm air furnace installations by covering the pipes and casing with Corrugated Asbestos Paper—a flexible insulation material especially suited for wrapping furnace pipes.



**Asbestos Paper**  
8-10-12-14-16-32 lbs. per  
100 square feet.  
18" and 36" wide—50  
or 100 lb. Rolls.



**Asbestos Mill Board**  
 $\frac{1}{8}$ · $\frac{1}{4}$ · $\frac{1}{2}$ " thick in sheets  
42x48



**Corrugated Asbestos Board**  
A flexible insulation  $\frac{1}{8}$ ,  $\frac{1}{6}$   
or  $\frac{1}{4}$  inch thick. Especially  
adapted for wrapping furnace  
pipes.

You can add to your profits and increase customer satisfaction with Standard Asbestos Products

**STANDARD ASBESTOS  
MANUFACTURING CO.**

OF CHICAGO  
820 WEST LAKE ST., CHICAGO

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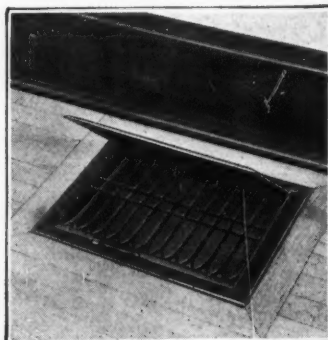
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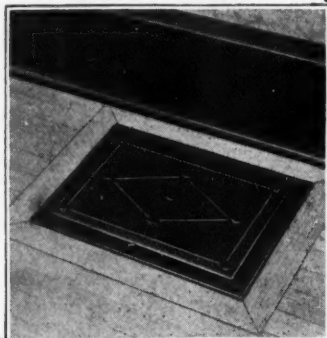
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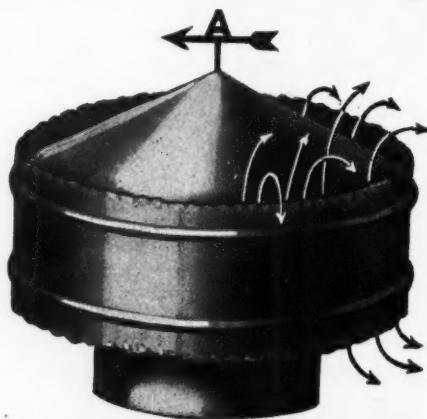
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**GENERAL  
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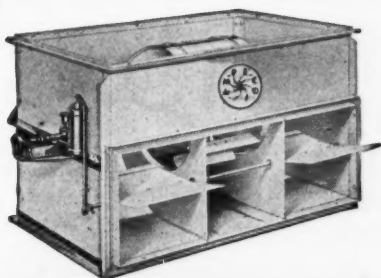
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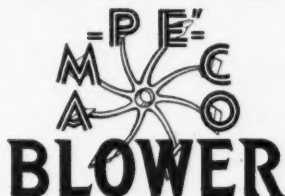
*for Your Heating Jobs*

AM-PE'-CO has revolutionized air circulator construction and efficiency. The only blower that positively provides a fully balanced distribution of air to the rotor—vital to proper blower operation. Patented improvements assure positive, uniform heat delivery. Mechanically controlled; compact; quiet; non-leaking ring oil bearings. A big business builder and profit maker for the dealer.

Built with or without dampers which open automatically when the blowers stop, for gravity circulation. Get more blower business for yourself—write us for literature on Am-pe'-co Blowers, and full information.

AMERICAN MACHINE PRODUCTS COMPANY  
Marshalltown, Iowa

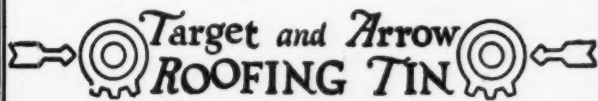
For 15 Years Manufacturers of Precision Products



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*to Tie to*

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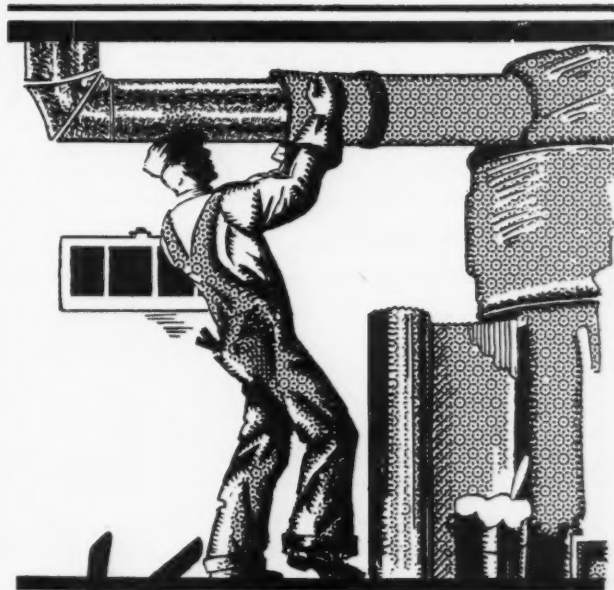
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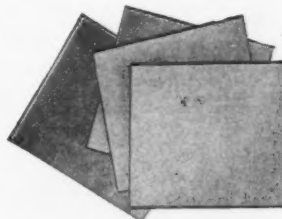
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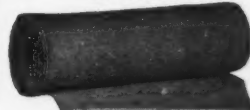
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**Asbestos Paper**  
8-10-12-14-16-32 lbs. per  
100 square feet.  
18" and 36" wide—50  
or 100 lb. Rolls.



**Asbestos Mill Board**  
3/4-1/4-1/2" thick in sheets  
42x48



**Corrugated Asbestos Board**  
A flexible insulation 3/4, 1/6  
or 1/4 inch thick. Especially  
adapted for wrapping furnace  
pipes.

You can add to your profits and increase customer satisfaction with Standard Asbestos Products

## STANDARD ASBESTOS MANUFACTURING CO.

OF CHICAGO  
820 WEST LAKE ST., CHICAGO

Mention AMERICAN ARTISAN in your reply—Thank you!



# ~ MARKET QUOTATIONS ~

AMERICAN ARTISAN is the only publication quoting Prices on Metals, Sheet Metal Equipment and Supplies, Warm Air Heating Supplies and Accessories, corrected bi-weekly. These quotations are not guaranteed but are obtained from reliable sources and reflect nation-wide market conditions at the time of going to press.

NOTE—These prices are Chicago Warehouse Prices to which must be added territory differentials

## METALS

### PIG IRON

Chicago Fdy.,	
No. 2	\$17.50
Southern Fdy. No. 2	\$17.01 to 17.51
Lake Superior Charcoal	17.04
Malleable	17.50

### FIRST QUALITY BRIGHT CHARCOAL TIN PLATES

IC	20x28	112 sheets	\$22.50
IX	20x28		25.50
IXX	20x28	56 sheets	14.50
IXXX	20x28		15.50
IXXXX	20x28		17.00

### TERNE PLATES

IC	20x28, 40-lb.	112 sheets	\$24.00
IX	20x28, 40-lb.	112 sheets	25.50
IX	20x28, 25-lb.	112 sheets	20.50
IX	20x28, 25-lb.	112 sheets	23.50
IX	20x28, 20-lb.	112 sheets	19.00
IV	20x28, 20-lb.	112 sheets	22.00

### "ARMCO" INGOT IRON PLATES

No. 8 ga.—110 lbs.	\$4.15
3/16 in.—100 lbs.	4.05
1/2 in.—100 lbs.	3.85

### COKE PLATES

Cokes, 80 lbs., base, 20x28	\$12.00
Cokes, 90 lbs., base, 20x28	12.20
Cokes, 100 lbs., base, 20x28	13.75
Cokes, 107 lbs., base, IC	
20x28	12.75
Cokes, 135 lbs., base, IX	
20x28	14.75
Cokes, 155 lbs., base, 2X	
56 sheets	8.50
Cokes, 175 lbs., base, 3X	
56 sheets	9.35
Cokes, 195 lbs., base, 4X	
56 sheets	10.25

### BLUE ANNEALED SHEETS

Base 10 ga.	per 100 lbs. \$3.35
"Armco" 10 ga.	per 100 lbs. 4.15

### ONE PASS COLD ROLLED BLACK

No. 18-20	per 100 lbs. \$3.75
No. 22	per 100 lbs. 3.70
No. 24	per 100 lbs. 3.75
No. 26	per 100 lbs. 3.85
No. 27	per 100 lbs. 3.90
No. 28	per 100 lbs. 4.00

### GALVANIZED

No. 16	per 100 lbs. \$3.85
No. 18	per 100 lbs. 3.95
No. 20	per 100 lbs. 4.15
No. 22	per 100 lbs. 4.20
(Standard differentials on extras to apply)	
No. 24	per 100 lbs. \$4.35
No. 26	per 100 lbs. 4.60
No. 27	per 100 lbs. 4.70
No. 28	per 100 lbs. 4.85
"Armco" 24	per 100 lbs. 5.95

### BAR SOLDER

Warranted 50-50	per 100 lbs. \$19.00
45-55	per 100 lbs. 17.50
48-52	per 100 lbs. 18.00
Plumbers'	per 100 lbs. 15.50

### ZINC

In Slabs	\$5.00
----------	--------

### SHEET ZINC

Cank Lots (600 lbs.)	\$12.00
Sheet Lots (100 lbs.)	13.00

### BRASS

Sheets, Chicago base	17% c
Tubing, brazed, Chicago base	25% c
Tubing, seamless, Chicago base	22% c
Wire, Chicago base	18% c
Rods, Chicago base	16% c

## COPPER

Sheets, Chicago base	20% c
Tubing, seamless, Chicago base	23% c
Wire, plain rd., 8 B. & S. Ga. and heavier	13% c

## LEAD

American Pig	\$6.00
Bar	7.50

## TIN

Bar Tin	per 100 lbs. \$32.00
Pig Tin	per 100 lbs. 31.00

## SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES

### ASBESTOS

Paper up to 1/16	5c per lb.
Roll board	6c per lb.
Mill board 3/32 to 1/2	6c per lb.
Corrugated paper (250 sq. ft. per roll)	\$5.00 per roll

### ASBESTOS SEGMENTS

8 in.	per 25 sets \$1.85
9 in.	per 25 sets 2.10
10 in.	per 25 sets 2.35
12 in.	per 25 sets 2.65

### CEMENT FURNACE

5-lb. cans, net	\$0.40
10-lb. cans, net	0.80
25-lb. cans, net	2.00
Per 100 lbs.	7.50

## CLIPS

Damper	
No-Rivet Steel, with tail pieces, per gross	\$9.50
Rivet Steel, with tail pieces, per gross	7.50
Tail pieces, per gross	2.40

## COPPER FOOTING

Copper Footing	41%
----------------	-----

## CORNICE BRAKES

Chicago Steel Bending	
No. 1 to 6B	Net

## CUT-OFFS

Cal., plain, round or cor. rd.	
26 gauge	30%
28 gauge	35%

## DAMPERS

Yankee Warm Air	
7 inch, doz.	\$1.60
8 inch, doz.	2.20
9 inch, doz.	2.60
10 inch, doz.	2.80
12 inch, doz.	3.50
14 inch, doz.	5.00

## EAVES TROUGH

Galv. Crimpedge, crated	75-15%
Zinc	60%

## ELBOWS

Conductor Pipe	
Galv. plain or corrugated, round flat Crimp.	
28 gauge	60-10%
26 gauge	50%
24 gauge	15%
Galv. Terne Steel	
Plain Rd. and Rd. Corr.	
28 gauge	60-10%
26 gauge	50%
24 gauge	15%

## Square Corrugated

28 gauge	55%
26 gauge	40%

## Portico Elbows

Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested	70 & 5%
Nested solid	70 & 5%

## Sq. Corr., A. & B. & Octagon

28 gauge	55%
26 gauge	40%

## Portico

1, 1 1/4, 1 1/2 inch	45%
----------------------	-----

## Copper

16 oz. all designs	50%
--------------------	-----

## Zinc

All styles	60%
------------	-----

## ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue	
No. 28 Gauge, Doz.	
5 inch	\$1.15
6 inch	1.25
7 inch	1.75

## Adjustable—Uniform Blue

No. 28 Gauge, Uniform Blue.	
5 inch	\$1.60
6 inch	1.75
7 inch	2.10

## WOOD FACES—60% off list.

## FIRE POTS

No. 02 Gasoline Torch, 1 qt.	\$5.15
No. 9250, Kerosene, or Gasoline Torch, 1 qt.	6.50
No. 10 Tinner's Furnace Square tank, 1 gal.	11.20
No. 15 Tinner's Furnace Round tank, 1 gal.	10.70
No. 21 Gas Soldering Furnace	8.00
No. 110 Automatic Gas Soldering Furnace	10.50

## GLASS

Single and Double Strength, A, all brackets	85%
Single and Double Strength, B, all brackets	87%

## HANGERS

Conductor Pipe	
Milcor Perfection Wire	25%
Milcor Triplex Wire	10%
Eaves Trough	
Steel (galv. after forming) from list	45%
Selflock E. T. Wire, List	10%

## HOOKS

Conductor	
"Direct Drive" Wrought Iron for wood or brick	15%

## MITRES

Galvanized Steel Mitres	
28 gauge	70
26 gauge	60-20

## PASTE

Asbestos Dry Paste	
200-lb. barrel	\$15.00
100-lb. barrel	7.75
50-lb. pail	4.50
25-lb. pail	2.50
10-lb. bag	1.20
5-lb. bag	0.60

## PIPE

Galvanized	
Crated and nested (all gauges)	75-12 1/2%
Crated and not nested (all gauges)	75-7 1/2%
Furnace Pipe	
Double Wall Pipe and Fittings	60%
Single Wall Pipe, Round Galvanized Pipe	60%
Galvanized and Tin Fittings	60%

Lead	
Per 100 lbs.	\$12.50
Stove Pipe	
"Milcor" "Titelock" Uniform Blue	
28 gauge, 5 inch U. C. nested	\$10.00
28 gauge, 6 inch U. C. nested	11.00
28 gauge, 7 inch U. C. nested	13.00
30 gauge, 5 inch U. C. nested	9.25
30 gauge, 6 inch U. C. nested	10.00
30 gauge, 7 inch U. C. nested	12.00

T-Joint Made Up	
6 inch, 28 ga.	per doz. \$3.40

## REGISTERS AND FACES

Floor Registers	
Except Cast Iron	40 & 10%
Cast Iron	20%

Baseboard	
2-Piece	40 & 10%
1-Piece	40-10 & 20%

Adjustable Ventilators	
Adjustable Cold Air Faces	40 & 10%
Adjustable Ventilators	40 & 10%

## RIDGE ROLL

Galv. Plain Ridge Roll, b'd'd	75-15-5%
Galv. Plain Ridge Roll, crated	75-15%

## SCREWS

Sheet Metal	
7, 1/2 x 1/2, per gross	\$0.52
No. 10, 1/2 x 1/2, per gross	0.68
No. 14, 1/2 x 1/2, per gross	0.83

## SHEARS, TINNERS' AND MACHINISTS'

Viking	\$22.00
Lennox Throatless	
No. 18	35%
Shear blades (f. o. b. Marshalltown, Iowa.)	10%

## SHOES

Galv. 28 Gauge, Plain or Corrugated, round flat crimp	60%
26 gauge, round flat crimp	50%
24 gauge, round flat crimp	15%

## SNIPS

Tinners'	Net
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## VENTILATORS

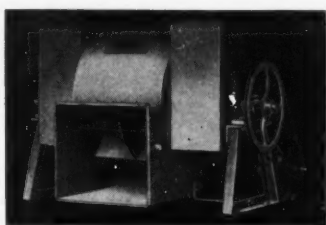
Standard	30 to 40%
Milcor	Net

## EVERY

Installation  
Has Been a  
SUCCESS!

Furblo sends the heat UP from the basement, quietly and positively. No louvres to get out of order. Easy to install. Dependable.

**Furblo**  
*The Quiet Efficient Furnace Blower*



### CLIP THIS AD—

attach to your letterhead and mail to us for catalog and installation data. Get more profits with Furblo.

**LAKESIDE CO.**  
Hermansville, Mich.  
Makers of Lakeside Ventilating Systems

## The AUTOMATIC DRIP HUMIDIFIER



Entirely Different  
Write for Details

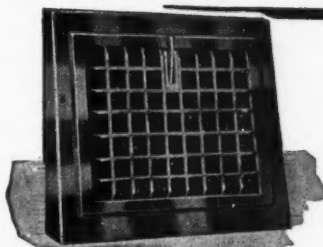
### Correct and Controlled Humidity

THE Automatic Drip Humidifier is unlike all others. The amount of humidity desired is *regulated*. It is simple, fool-proof, durable, reliable and high grade in every respect.

For every warm air heating installation and especially desirable with oil heat because of control feature.

For efficiency and profits sell the Automatic Drip Humidifier—send for complete information today.

**AUTOMATIC HUMIDIFIER COMPANY**  
CEDAR FALLS, IOWA



The ARISTOCRAT  
(Patented)

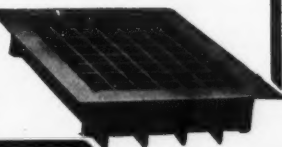
Registers of every type, size and finish for Heating and Ventilating.

**AUER REGISTER CO.**  
3608 Payne Avenue  
CLEVELAND, OHIO

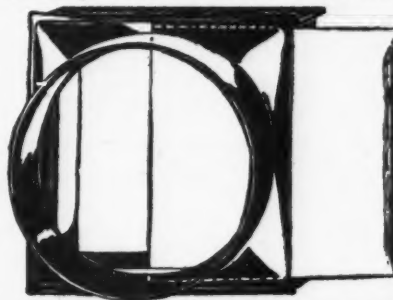
## AUER'S

Permanently  
Perfect Operating  
Registers—

Also Grilles and  
Clothes Chute Doors



## Keep Moisture Out of Smoke Pipes



with the  
"NO-DAMP"

It's a

- 1 Draft Control
- 2 Thimble
- 3 Protection Against Moisture
- 4 Pipe Saver

IT SELLS ON SIGHT  
—EASY TO INSTALL

Write today for circulars and prices

**IESSLER HARDWARE**

129-131 Fifth Street

Aurora, Illinois



only \$48 installed  
dealer price \$22.75



"SheerComfort" Heat Regulator gives all electric and fully automatic control over the draft and damper doors of home heating plants. Four exclusive safety features found in no other heat regulator at any price—yet costs less than any other electric regulator on the market. Ask your jobber or write H. M. Sheer Co., 213 Hampshire St., Quincy, Ill.

**SHEER COMFORT**  
heat Regulator

## Write for Free Book

### "BALANCED HEAT"

GET the real facts about Oil Heating from this new free book, which has created a sensation in the Oil Burner Industry. It contains 32 pages of facts that every oil burner dealer should know. Its publication marks a new era in the Oil Burner Industry. Facts cannot be denied! Laboratory tests cannot be "laughed off"! Actual performance is convincing evidence! Balanced Heat is the only scientific method of heating with oil.

WRITE FOR DEALERS PROPOSITION

**McILVAINE BURNER CORPORATION**

747 Custer Avenue Dept. A Evanston, Illinois

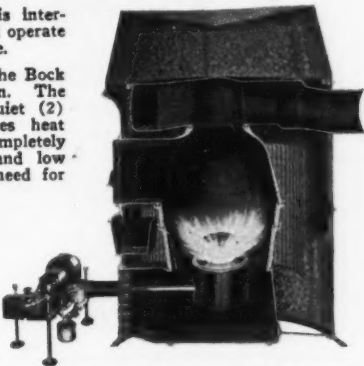
## The BOCK Oil Burner for Warm Air Furnace Heating

Every one of your customers is interested in an oil burner which will operate efficiently in a warm air furnace.

The constant flame principle of the Bock insures such efficient operation. The Bock is (1) dependable and quiet (2) extremely simple (3) distributes heat evenly to all castings (4) completely automatic, and (5) its high and low flame operation eliminates the need for electrical ignition or gas pilot.

The Bock solves the problem of efficient oil heating in a warm air furnace.  
Write for details.

**The Bock Oil Burner Corporation**  
Madison Wisconsin



A new furnace paste  
FOR BETTER, NEATER  
AND QUICKER WORK

Non-Cereal—Non-Souring

Asbestos Paper will not absorb it as it does cereal pastes. Paper does not become soggy—not so apt to tear.

Larco Mineral Paste does not turn brown—no stains—mice will not touch it either when moist or dry and it does not gum up the hands. Larco Paste can be kept on hand mixed ready for use. It has greater covering qualities. It slips easily but adheres permanently.

Order a trial can now—it will not sour—keeps any length of time.

Write for circular which tells all about it—get Larco prices.

**WESTERN MINERAL PRODUCTS CO.**

OMAHA

(Formerly Larsen-Bennett Co.)

NEBRASKA

Say you saw it in AMERICAN ARTISAN—Thank you!

# BUYERS' DIRECTORY

## Air Cleaners

American Fdy. & Furnace Co.,  
Bloomington, Ill.  
Independent Air Filter Co.,  
Chicago, Ill.  
Meyer & Bro. Co., F.,  
Peoria, Ill.  
Warm Air Furnace Fan Co.,  
Cleveland, Ohio  
Watt Mfg. Co.,  
Sterling, Ill.

## Air Washers

A. Gehrl & Co., Tacoma, Wash.  
Watt Mfg. Co., Sterling, Ill.

## Aluminum Sheets

J. M. & L. A. Osborn Co.,  
Cleveland, Ohio

## Asbestos—Liquid

Technical Products Co., Pittsburgh, Pa.

## Asbestos Paper

Sall-Mountain Co., Chicago, Ill.  
Standard Asbestos Co. of Chicago,  
Chicago, Ill.  
Wilson, Grant, Inc., Chicago, Ill.

## Blast Gates

Berger Bros. Co., Philadelphia, Pa.

## Blowers—Furnace

American Fdy. & Furnace Co.,  
Bloomington, Ill.  
American Machine Products Co.,  
Marshalltown, Iowa  
A. Gehrl & Co., Tacoma, Wash.  
Brundage Co., Kalamazoo, Mich.  
Lakeside Co., Hermansville, Mich.  
Warm Air Furnace Fan Co.,  
Cleveland, Ohio  
Watt Mfg. Co., Sterling, Ill.

## Bolts—Stove

Lamson & Sessions Co.,  
Cleveland, Ohio  
Ryerson & Son, Inc., Jos. T.,  
Chgo., N. Y., St. L., Det., Cleve.

## Brakes—Bending

Dreis & Krump Mfg. Co., Chicago, Ill.  
Interstate Machinery Co., Chicago, Ill.  
Ryerson & Son, Inc., Jos. T.,  
Chgo., N. Y., St. L., Det., Cleve.  
Peck, Stow & Wilcox Co.,  
Southington, Conn.

## Brakes—Cornice

Dreis & Krump Mfg. Co., Chicago, Ill.

## Brass and Copper

American Brass Co., Waterbury, Conn.  
Chase Brass & Copper Co.,  
Waterbury, Conn.  
Copper & Brass Research Association,  
New York, N. Y.  
Revere Copper & Brass, Rome, N. Y.

## Bronze

Revere Copper & Brass, Rome, N. Y.

## Cans—Garbage

Diener Mfg. Co., G. W., Chicago, Ill.  
Osborn Co., The J. M. & L. A.,  
Cleveland, Ohio

## Castings—Malleable

Fanner Mfg. Co., Cleveland, Ohio

## Ceilings—Metal

Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.

## Chaplets

Fanner Mfg. Co., Cleveland, Ohio

## Cleaners—Vacuum

Brillion Furnace Co., Brillion, Wis.  
National Super Service Co.,  
Toledo, Ohio

## Copper

American Brass Co., Waterbury, Conn.  
Chase Brass & Copper Co.,  
Waterbury, Conn.  
Revere Copper & Brass, Rome, N. Y.  
Rockford Sheet Steel Co.,  
Rockford, Ill.

## Cornices

Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.

## Cut-offs—Rain Water

Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.

## Dampers—Quadrants—Accessories

Aeolus Dickinson, Chicago, Ill.  
Hart & Cooley Co., Holland, Mich.  
Howes Co., S. M., Boston, Mass.  
Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.  
Parker-Kalon Corp., New York, N. Y.

## Dampproofings

Lastik Products Corp., Pittsburgh, Pa.

## Damper Regulators

Sheer Co., H. M., Quincy, Ill.

## Diffuser—Air Duct

Aeolus Dickinson, Chicago, Ill.

## Drills—Electric

Ryerson & Son, Inc., Jos. T.,  
Chgo., N. Y., St. L., Det., Cleve.  
J. M. & L. A. Osborn Co.,  
Cleveland, Ohio  
The Stanley Electric Tool Co.,  
New Britain, Conn.

## Drive Screws—Hardened Metallic

Parker-Kalon Corp.,  
190 Varick St., New York

## Eaves Trough

Barnes Metal Products Co.,  
Chicago, Ill.  
Berger Bros. Co., Philadelphia, Pa.  
Chase Brass & Copper Co.,  
Waterbury, Conn.  
Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.  
Rockford Sheet Steel Co.,  
Rockford, Ill.

## Elbows and Shoes—Conductor

Apex Gutter Hanger Corp.,  
New York, N. Y.  
Barnes Metal Products Co.,  
Chicago, Ill.  
Levow, David, New York, N. Y.  
Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.  
Rockford Sheet Steel Co.,  
Rockford, Ill.

## Filters—Furnace

Independent Air Filter Co.,  
Chicago, Ill.  
Warm Air Furnace Fan Co.,  
Cleveland, Ohio

## Fittings—Conductor

Barnes Metal Products Co.,  
Chicago, Ill.  
Braden Mfg. Co., Terre Haute, Ind.  
Levow, David, New York, N. Y.  
Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.

## Fluxes—Soldering

Kester Soldering Co., Chicago, Ill.

## Furnace Cement

Connors Paint Mfg. Co., Wm.,  
Troy, N. Y.  
Lastik Products Corp., Pittsburgh, Pa.  
Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.  
Technical Products Co., Pittsburgh, Pa.

## Furnace Chain

Hart & Cooley Co., Holland, Mich.

## Furnace Cleaners—Suction

Brillion Furnace Co., Brillion, Wis.  
National Super Service Co.,  
Toledo, Ohio

## Furnace Fans

A-C Mfg. Co., Pontiac, Ill.  
American Fdy. & Furnace Co.,  
Bloomington, Ill.  
Brundage Co., The Kalamazoo, Mich.  
Lakeside Co., Hermansville, Mich.  
Robinson Co., A. H., Massillon, Ohio  
Warm Air Furnace Fan Co.,  
Cleveland, Ohio  
Watt Mfg. Co.,  
Sterling, Ill.

## Furnace Filters

Warm Air Furnace Fan Co.,  
Cleveland, Ohio

## Furnace Pokers

Fanner Mfg. Co., Cleveland, Ohio

## Furnace Pulleys

Hart & Cooley Co., Holland, Mich.

## Furnace Regulators

Minneapolis-Honeywell Regulator  
Co., Minneapolis, Minn.  
Sheer Co., H. M., Quincy, Ill.  
White Mfg. Co., Minneapolis, Minn.

## Furnace Rings

Forest City-Walworth Run  
Foundries Co., Cleveland, Ohio

## Furnace Switch—Automatic

Payne Furnace & Supply Co.,  
Beverly Hills, Cal.

## Furnaces—Gas

Calkins & Pearce, Columbus, Ohio  
Lennox Furnace Co.,  
Marshalltown, Iowa  
Mueller Furnace Co., L. J.,  
Milwaukee, Wis.  
Payne Furnace & Supply Co.,  
Beverly Hills, Cal.  
Robinson Co., A. H., Massillon, Ohio  
Rudy Furnace Co., Dowagiac, Mich.  
Wise Furnace Co., Akron, Ohio

## Furnaces—Oil Burning

Motor Wheel Corp., Heater Div.,  
Lansing, Mich.

## Furnaces—Warm Air

Agricola Furnace Co., Gadsden, Ala.  
American Fdy. & Furnace Co.,  
Bloomington, Ill.  
American Furnace Co., St. Louis, Mo.  
Armstrong Furnace Co., Columbus, O.  
The Beckwith Co., Dowagiac, Mich.  
Brillion Furnace Co., Brillion, Wis.  
Dowagiac Steel Furnace Co.,  
Dowagiac, Mich.  
Enterprise Boiler & Tank Works,  
Chicago, Ill.  
Farris Furnace Co., Springfield, Ill.  
Forest City-Walworth Run Fdy.,  
Cleveland, Ohio  
Fox Furnace Co.,  
Cleveland, Ohio  
Fry Furnace Co.,  
Cleveland, Ohio  
Hall-Neal Furnace Co.,  
Indianapolis, Ind.  
Henry Furnace & Fdy. Co.,  
Cleveland, Ohio  
Knise Co., Indianapolis, Ind.  
Lauenberg Mfg. Co., St. Louis, Mo.  
London Furnace Co., London, Ohio  
Lennox Furnace Co.,  
Marshalltown, Iowa  
Syracuse, N. Y.

May Flebeger Furnace Co.,  
Syracuse, N. Y.

Meyer Furnace Co., The, Peoria, Ill.

Midland Furnace Co., Columbus, Ohio

Motor Wheel Corp., Heater Div.,  
Lansing, Mich.

Mt. Vernon Furnace & Mfg. Co.,  
Mt. Vernon, Ill.

Mueller Furnace Co., L. J.,  
Milwaukee, Wis.

Payne Furnace & Supply Co.,  
Beverly Hills, Cal.

Premier Warm Air Heater Co.,  
Dowagiac, Mich.

Peerless Foundry Co.,  
Indianapolis, Ind.

Robinson Furnace Co.,  
Chicago, Ill.

Rybolt Heater Co.,  
Ashland, Ohio

Rudy Furnace Co.,  
Dowagiac, Mich.

Standard Fdy. & Furnace Co.,  
De Kalb, Ill.

Success Heater Mfg. Co.,  
Des Moines, Iowa

Schwab Furnace & Mfg. Co.,  
Milwaukee, Wis.

Thatcher Furnace Co., Newark, N. J.

XXth Century H. & V. Co.,  
Akron, Ohio

Waterman-Waterbury Co.,  
Minneapolis, Minn.

Western Steel Products Co.,  
Duluth, Minn.

Wise Furnace Co.,  
Akron, Ohio

## Gas Burning Attachments

Calkins & Pearce, Columbus, Ohio  
Munkel-Rippel Heating  
Co., Columbus, Ohio

## Grilles

Auer Register Co., Cleveland, Ohio  
Harrington & King Perforating Co.,  
Chicago, Ill.  
Hart & Cooley Co., New Britain, Conn.  
Independent Register & Mfg. Co.,  
Cleveland, Ohio  
Tuttle & Ralier Mfg. Co., Chicago, Ill.  
U. S. Register Co., Battle Creek, Mich.

## Guards—Machine and Belt

Harrington & King Perforating Co.,  
Chicago, Ill.

## Handles—Boiler

Berger Bros. Co., Philadelphia, Pa.

## Handles—Soldering Iron

Hyro Mfg. Co., New York, N. Y.

## Handles—Furnace Door

Fanner Mfg. Co., Cleveland, Ohio

## Hangers—Eaves Trough

Apex Gutter Hanger Corp.,  
New York, N. Y.  
Berger Bros. Co., Philadelphia, Pa.  
Chase Brass & Copper Co.,  
Waterbury, Conn.  
Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.

## Heat Regulation Systems

Minneapolis-Honeywell Regulator  
Co., Minneapolis, Minn.  
Noll Regulator Co., Youngstown, Ohio  
Sheer Co., H. M., Quincy, Ill.  
White Mfg. Co., Minneapolis, Minn.

## Heaters—Cabinet

Fox Furnace Co., Elyria, Ohio  
Mt. Vernon Furnace & Mfg. Co.,  
Mt. Vernon, Ill.  
Motor Wheel Corp., Heater Division,  
Lansing, Mich.  
Payne Furnace & Supply Co.,  
Beverly Hills, Cal.  
Waterman-Waterbury Co.,  
Minneapolis, Minn.

## Heaters—School Room

Meyer Furnace Co., The, Peoria, Ill.  
Western Steel Products Co.,  
Duluth, Minn.  
Waterman-Waterbury Co.,  
Minneapolis, Minn.

## Humidifiers

Automatic Humidifier Co.,  
Cedar Falls, Iowa  
Diener Mfg. Co., G. W., Chicago, Ill.  
Meyer & Bro. Co., F., Peoria, Ill.  
Sheer Co. H. M., Quincy, Ill.  
J. L. Skutumpah Co.,  
Dowagiac, Mich.  
Sallada Mfg. Co., Minneapolis, Minn.

## Lath—Expanding Metal

Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.

## Machines—Crimping

Bertsch & Co., Cambridge City, Ind.  
Yoder Co., The, Cleveland, O.

## Machinery—Culvert

Bertsch & Co., Cambridge City, Ind.  
Interstate Machinery Co., Chicago, Ill.

## Machinery—Rebuilt

Interstate Machinery Co., Chicago

## Machines—Tinsmith's

Bertsch & Co., Cambridge City, Ind.  
Dreis & Krump Mfg. Co., Chicago, Ill.  
Hyro Mfg. Co., New York, N. Y.  
Interstate Machinery Co., Chicago, Ill.  
Marshalltown Mfg. Co.,  
Marshalltown, Iowa  
Osborn Co., The J. M. & L. A.,  
Cleveland, Ohio  
Ryerson & Son, Inc., Jos. T.,  
Chgo., N. Y., St. L., Det., Cleve.  
The Stanley Electric Tool Co.,  
New Britain, Conn.  
Whitney Mfg. Co., W. A.,  
Rockford, Ill.  
Yoder Co., The, Cleveland, O.

## Metals—Perforated

Harrington & King Perforating Co.,  
Chicago, Ill.

## Miters—Eaves Trough

Barnes Metal Products Co., Chicago, Ill.  
Berger Bros. Co., Philadelphia, Pa.  
Braden Mfg. Co., Terre Haute, Ind.  
Milcor Steel Co.,  
Mil., Canton, Chgo., La Crosse, K. C.

## Nails—Copper and Brass

Chase Brass & Copper Co.,  
Waterbury, Conn.  
Revere Copper & Brass, Rome, N. Y.

(Continued on page 144)



## A Heat Hustler Fan Forces Air Through a Single Warm Air Pipe

Heats garages, sun porches and other rooms that will not heat by gravity. Mounts directly in the warm air pipe. Draws heat from the furnace and forces it into the hard-to-heat room. Quick heat for a bathroom.

Four reasons why you should use the American Heat Hustler:

1. It uses a positive pressure, rotary type fan.
2. Motor is outside the warm air flow, adding greatly to life of motor and leaving as much space for gravity air flow as before the Heat Hustler was installed.
3. It is quiet.
4. Furnished for either automatic or manual control.

Price list, with descriptive literature showing different models, sizes, etc., will be sent you by return mail upon receipt of your request. CLIP AND SEND THIS AD IN NOW!

### AMERICAN FOUNDRY & FURNACE COMPANY

Bloomington,

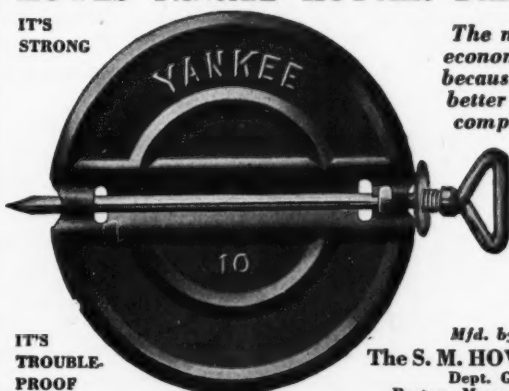
World's largest manufacturers  
of blower furnace systems

Illinois



### HOWES YANKEE HOT-AIR DAMPER

IT'S  
STRONG



The most  
economical  
because it's  
better and  
complete

IT'S  
TROUBLE-  
PROOF

Mfd. by  
The S. M. HOWES CO.  
Dept. C.  
Boston, Massachusetts



### FURNACE POKERS STRAIGHT OR BENT POINT

Plain or Japanned

$\frac{1}{2}$ "— $\frac{5}{8}$ " and  $\frac{3}{4}$ " diameter

Lengths from 3 to 6 foot

DEPT. F

FANNER MANUFACTURING CO.  
BROOKSIDE PARK CLEVELAND, OHIO

## "American Seal"

FURNACE CEMENT

Roof Cement—Stove Putty  
Plumbers Putty

PAINTS AND SPECIALTIES

WILLIAM CONNORS PAINT MFG. CO.

Established 1852

TROY

NEW YORK

JAMES L. PERKINS, Western Distributor  
140 South Dearborn Street, Chicago, Illinois

## RYERSON

IMMEDIATE SHIPMENT FROM STOCK

More than twenty kinds of prime quality sheets are carried in stock. There is a special sheet for every purpose. Also Bars, Angles, Rivets, Bolts, Tools and Metal-Working Machinery.

Write for Journal and Stock List

JOSEPH T. RYERSON & SONS, Inc.

Chicago Milwaukee Jersey City Buffalo Philadelphia  
Detroit St. Louis Cincinnati Cleveland Boston

## SHEETS

## Just Out!

SYMONDS  
NEW CATALOG No. 31

"A COMPLETE LINE"

Just Say the Word—A Postal Card Will Do—  
Uncle Sam Will Do the Rest

SYMONDS REGISTER CO. 3117-23 Minnesota Ave.  
ST. LOUIS, MISSOURI

## The Viking Shear

Compound lever handle—removable blades. Upper blade away from mechanic enabling easy following of work—an exclusive Viking feature.



Sold Under a Guarantee—Send for Particulars

VIKING SHEAR CO., Erie, Pa.

Mention AMERICAN ARTISAN in your reply—Thank you!

# BUYERS' DIRECTORY

(Continued from page 142)

## Nails—Hardened Masonry

Parker-Kalon Corp., New York, N. Y.

## Oil Burners

Berryman System of Oil Heating, Inc., Chicago, Ill.  
 Bettendorf Mfg. Co., Bettendorf, Iowa  
 Rock Oil Burner Co., Madison, Wis.  
 Melvaine Burner Corp., Evanston, Ill.  
 Silent Automatic Corp., Detroit, Mich.

## Paint

Connors Paint Mfg. Co., Wm., Troy, N. Y.

## Perforated Metals

Harrington &amp; King Perforating Co., Chicago, Ill.

## Pipe and Fittings—Furnace

Henry Furnace & Fdy. Co., Cleveland, Ohio  
 Meyer & Bro. Co., F., Peoria, Ill.  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.  
 Osborn Co., The J. M. & L. A., Cleveland, Ohio  
 Peerless Foundry Co., Indianapolis, Ind.

## Pipe and Fittings—Stove

Meyer & Bro. Co., F., Peoria, Ill.  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

## Pipe—Conductor

Barnes Metal Products Co., Chicago, Ill.  
 Berger Bros. Co., Philadelphia, Pa.  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

## Punches

Bertsch & Co., Cambridge City, Ind.  
 Hyro Mfg. Co., New York, N. Y.  
 Interstate Machinery Co., Chicago, Ill.  
 Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
 W. A. Whitney Mfg. Co., Rockford, Ill.

## Punches—Combination Bench and Hand

Hyro Mfg. Co., New York, N. Y.

## Punches—Hand

Hyro Mfg. Co., New York, N. Y.  
 W. A. Whitney Mfg. Co., Rockford, Ill.

## Putty—Stove

Connors Paint Mfg. Co., Wm., Troy, N. Y.

## Radiator Cabinets

Hart &amp; Cooley Co., Holland, Mich.

## Ranges—Gas

The Beckwith Co., Dowagiac, Mich.  
 Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill.

## Registers—Warm Air

Auer Register Co., Cleveland, Ohio  
 Forest City-Walworth Run Foundries Co., Cleveland, Ohio  
 General Products Corp., Indianapolis, Ind.  
 Hart & Cooley Co., Holland, Mich.  
 Henry Furnace & Fdy. Co., Cleveland, Ohio  
 Independent Register & Mfg. Co., Cleveland, Ohio  
 Ku-No Register Mfg. Co., Columbus, Ohio  
 Meyer & Bro. Co., F., Peoria, Ill.  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.  
 Mueller Furnace Co., L. J., Milwaukee, Wis.  
 Rock Island Register Co., Rock Island, Ill.  
 Symonds Register Co., St. Louis, Mo.  
 Tuttle & Bailey Mfg. Co., Chicago, Ill.  
 United States Register Co., Battle Creek, Mich.  
 Waterloo Register Co., Waterloo, Iowa

## Register Shields

General Products Corp., Indianapolis, Ind.

## Registers—Wood

American Wood Register Co., Plymouth, Ind.  
 Auer Register Co., Cleveland, Ohio  
 Marsh Lumber Co., Dover, Ohio  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

## Regulators—Heat

Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.  
 H. M. Sheer Co., Chicago, Ill.  
 White Mfg. Co., Minneapolis, Minn.

## Ridging

American Rolling Mill Co., Middletown, Ohio  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

## Rivets—Stove

Lamson & Sessions Co., Cleveland, Ohio  
 Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

## Rods—Stove

Lamson &amp; Sessions Co., Cleveland, Ohio

## Rolls—Forming

Bertsch & Co., Cambridge City, Ind.  
 Interstate Machinery Co., Chicago, Ill.

## Roofing Cement

Connors Paint Mfg. Co., Wm., Troy, N. Y.  
 Lastik Products Corp., Pittsburgh, Pa.

## Roof Paints

Lastik Products Corp., Pittsburgh, Pa.

## Roof—Flashing

Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

## Roofing—Iron and Steel

American Rolling Mill Co., Middletown, Ohio  
 Central Alloy Division, Republic Steel Corp., Youngstown, Ohio  
 Inland Steel Co., Chicago, Ill.  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.  
 Osborn Co., The J. M. & L. A., Cleveland, Ohio  
 Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

## Roofing—Tin

Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.  
 Taylor Co., N. & G., Philadelphia, Pa.

## Rubbish Burners

Hart &amp; Cooley Co., New Britain, Conn.

## Schools—Sheet Metal Pattern Drafting

St. Louis Technical Institute, St. Louis, Mo.

## Schools—Warm Air Heating

St. Louis Technical Institute, St. Louis, Mo.

## Screws—Hardened Metallic Drive

Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.  
 Parker-Kalon Corp., 200 Varick St., New York

## Screws—Hardened Self-Tapping, Sheet Metal

Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.  
 Parker-Kalon Corp., 200 Varick St., New York

## Screens—Perforated Metal

Harrington &amp; King Perforating Co., Chicago, Ill.

## Scuppers

Aeolus Dickinson, Chicago, Ill.

## Shears—Hand and Power

Interstate Machinery Co., Chicago, Ill.  
 Marshalltown Mfg. Co., Marshalltown, Ia.  
 Peck, Stow & Wilcox Co., Southington, Conn.  
 Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
 The Stanley Electric Tool Co., New Britain, Conn.  
 Viking Shear Co., Erie, Pa.  
 Yoder Co., The, Cleveland, O.

## Sheet Metal Screws—Hardened, Self-Tapping

Parker-Kalon Corp., 200 Varick St., New York

## Sheets—Alloy

International Nickel Co., New York, N. Y.  
 Republic Steel Corp., Youngstown, Ohio

## Sheets—Black and Galvanized

American Rolling Mill Co., Middletown, Ohio  
 Inland Steel Co., Chicago, Ill.  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.  
 Osborn Co., The J. M. & L. A., Cleveland, Ohio  
 Republic Steel Corp., Youngstown, Ohio  
 Rockford Sheet Steel Co., Rockford, Ill.  
 Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
 Taylor Co., N. & G., Philadelphia, Pa.

## Sheets—Iron

American Rolling Mill Co., Middletown, Ohio  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.  
 Republic Steel Corp., Youngstown, Ohio  
 Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

## Sheets—Tin

Taylor Co., N. &amp; G., Philadelphia, Pa.

## Shingles and Tiles—Metal

Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

## Sifters—Ash

Diener Mfg. Co., G. W., Chicago, Ill.

## Sky Lights

Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

## Snips

Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

## Solder—Acid Core

Kester Solder Co., Chicago, Ill.

## Solder—Self-Fluxing

Kester Solder Co., Chicago, Ill.

## Solder—Rosin Core

Kester Solder Co., Chicago, Ill.

## Solder

Kester Solder Co., Chicago, Ill.  
 Mil., Canton, Chgo., La Crosse, K. C.

## Soldering Coppers

Revere Copper &amp; Brass, Rome, N. Y.

## Soldering Furnaces

Diener Mfg. Co., G. W., Chicago, Ill.  
 Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

## Specialties—Hardware

Diener Mfg. Co., G. W., Chicago, Ill.

## Stars—Hard Iron Cleaning

Fanner Mfg. Co., Cleveland, Ohio

## Tinplate

Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.  
 Osborn Co., The J. M. & L. A., Cleveland, Ohio  
 Taylor Co., N. & G., Philadelphia, Pa.

## Tools—Tinsmith's

Bertsch & Co., Cambridge City, Ind.  
 Dries & Krump Mfg. Co., Chicago, Ill.  
 Hyro Mfg. Co., New York, N. Y.  
 Interstate Machinery Co., Chicago, Ill.  
 Osborn Co., The J. M. & L. A., Cleveland, Ohio  
 Peck, Stow & Wilcox Co., Southington, Conn.  
 Rockford Sheet Steel Co., Rockford, Ill.  
 Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
 The Stanley Electric Tool Co., New Britain, Conn.  
 Viking Shear Co., Erie, Pa.  
 Whitney Mfg. Co., W. A., Rockford, Ill.

## Torches

Diener Mfg. Co., G. W., Chicago, Ill.  
 Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

## Trade Extension

Copper & Brass Research Association  
 National Association of Flat Rolled  
 Steel Manufacturers, Cleveland, Ohio

## Trimnings—Stove and Furnace

Fanner Mfg. Co., Cleveland, Ohio

## Vacuum Cleaner—Furnace

Brillion Furnace Co., Brillion, Wis.  
 National Super Service Co., Toledo, Ohio

## Ventilators—Floor

Aeolus Dickinson, Chicago, Ill.

## Ventilators—Roof

Aeolus Dickinson, Chicago, Ill.  
 Berger Bros. Co., Philadelphia, Pa.  
 Paul R. Jordan & Co., Indianapolis, Ind.  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

## Ventilators—Ceiling

Hart & Cooley Co., New Britain, Conn.  
 Henry Furnace & Fdy. Co., Cleveland, Ohio

## Wood Faces—Warm Air

Auer Register Co., Cleveland, Ohio  
 American Wood Register Co., Plymouth, Ind.  
 Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

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Plants at Cleveland and Kent, Ohio; Chicago and Birmingham

**CHICAGO STEEL SLITTING SHEAR**

**LIGHT—POWERFUL DURABLE**



Capacity 10 gauge sheets  
Any Length or Width  
Flat Bars 3/16x2"  
Weight 22 pounds

**Price \$15.00 Net**  
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Made of pressed steel and equipped with hold-down. Blades of highest grade crucible steel. Most indispensable high grade shears made. Equal to other shears selling at over twice the price. **ORDER YOURS TODAY.**

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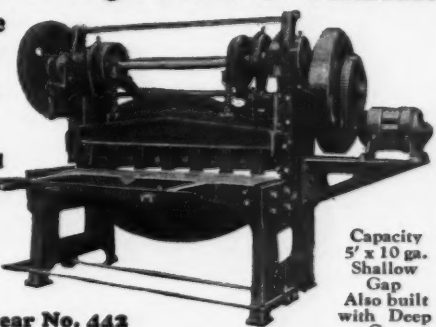
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**Our Line Light and Heavy Machinery for all classes of Sheet Metal Plate and Structural Work**



Capacity 5' x 10 ga. Shallow Gap Also built with Deep Gap

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**BERTSCH & CO., Cambridge City, Ind.**



The "Torrid" Furnace is designed to give a tremendous amount of heat, much more than that furnished by the ordinary tinner's furnace.

A fuel saver and generating machine of the finest quality made at the price.

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**BOOST YOUR PROFITS**

by lowering production costs with **KESTER Acid-Core SOLDER**. The flux, "right-in-the-core," saves time, labor and materials, yet turns out perfect sheet metal soldering jobs. Put up in 1, 5 and 20-lb. spools. For greater returns specify **KESTER**.

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Incorporated 1899

**KESTER FLUX-CORE SOLDER**





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## WANTS AND SALES

Yearly subscribers to the **AMERICAN ARTISAN** may insert advertisements of not more than fifty words in our Want and Sales Columns **WITHOUT CHARGE** for three insertions.

Such advertisements, however, must be limited to help or situation wanted, tools or equipment for sale, to exchange or to buy, business for sale or location desired, and must reach our office ten days prior to date of publication. This privilege is not extended to manufacturers or jobbers—or those making a business of buying and selling used machines—employment agencies and brokers.

When sending advertisement state whether your name or blind number is to be used.

### SITUATION WANTED

**Situation Wanted**—Want work as plumber and sheet metal worker in shop with Hardware store. Have had experience as clerk in store; can lay out own patterns and work them. Have small family and want steady year 'round job. Twenty-five dollars per week to start if employed by January 1st. Would consider buying good going shop on payment plan. Address E-530, **AMERICAN ARTISAN**, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By man 38 years of age. Eighteen years experience in all branches of warm air heating. Thoroughly understands forced, booster and gravity systems; can do own layout and drafting. Position wanted as salesman for a reliable furnace manufacturer or salesman and engineer for a dealer. Best of references furnished. Address X-529, **AMERICAN ARTISAN**, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—After January first, will be open for position. Have had twenty years of experience in sales, sales managing and handling of canvassers. Can take full charge of furnace installations and laying out plans. Can furnish surety or cash bond if required. Best of references. Address **AMERICAN ARTISAN**, 139 N. Clark Street, Chicago, Illinois, Box D-530.

**Situation Wanted**—Will operate branch or work with furnace manufacturer in Sales Department. Have installed furnaces for years. Am now managing local furnace shop. Can give good references of highest quality. What have you to offer? Address Mr. G. Van Horn, 1102 Heston St., Toledo, Ohio. G-529

**Situation Wanted**—First Class Licensed Plumber, sheet metal worker and heating man, steady, sober, and competent in all branches of the trade, would like steady position; or will take shop on commission. Address Arthur Greeter, Lake Geneva, Wisconsin. Z-529

Experienced furnace salesman wishes to associate himself with a reputable manufacturer having a complete line of furnaces. Wisconsin territory preferred. Address A-530, **AMERICAN ARTISAN**, 139 N. Clark St., Chicago, Ill.

### SITUATION WANTED

**Situation Wanted**—By sheet metal worker with a good knowledge of pattern drafting. Can work from blue prints. Have had school heating and factory maintenance experience. Know the Standard Code. Am thirty-nine years old and married, sober and steady. Address H-529, **AMERICAN ARTISAN**, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—If you answer this ad you will hear from a man who has had years of experience in the stove and furnace business—inside and outside, from shipping clerk to executive. A responsible position with possibilities is more important than location or large starting salary. Address J-529, **AMERICAN ARTISAN**, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—Have traveled Michigan and Indiana eight years selling high grade boilers, cast and steel furnaces and accessories. Can figure plans. Have a large acquaintance throughout this territory. Am married, own car, and can furnish references. Address Travers Daniel, Jr., 817 Merritt St., S.E., Grand Rapids, Mich. F-530

**Situation Wanted**—Thoroughly competent and reliable journeyman plumber, Illinois license, desires steady position year around. Also do steam, water and air heating if required. Am the kind of man who does the kind of work that pleases your customers and holds their trade. Try me. Address Mr. M. R. Trisler, 507 N. East St., Kewanee, Ill. F-529

**Situation Wanted**—By a first class sheet metal worker and furnace man. Not a floater—steady and reliable. Will work for board and transportation until March 1st. Address Y-529, **AMERICAN ARTISAN**, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By an all around sheet metal worker experienced in all branches of the trade; cornice, skylight, gutter, ventilation and furnace work. Address H. Lense, 2800 Benton Street, Edgewater, Colo. P-529

### BUSINESS CHANCES

**For Sale**—Shop that has been established 40 years; town of about 12,000; first class work only produced in warm air heating, sheet metal roofing, and ventilating. Only 3 other shops in town. Address Mr. Clyde M. Howell, 208 W. Third St., Greensburg, Pa. T-529

**For Sale**—Sturtevant Furnace Vacuum Cleaner, \$100 f.o.b. Detroit. Leaving for California is reason for selling. Address L-529, **AMERICAN ARTISAN**, 139 N. Clark St., Chicago, Ill.

**For Sale**—Tin Shop with living quarters. Well established and well equipped. Located in a live oil town. Buildings and stock will run about \$3000. Some terms to reliable party. Address J. P. Monday, Box 751, Hobbs, New Mexico. W-529

### HELP WANTED

**Wanted**—An all around man, who can do furnace and plumbing, windmill, pump repair, roofing and guttering. Steady work year around. State wages, age and experience in application. Address S-529, **AMERICAN ARTISAN**, 139 Clark St., Chicago, Ill.

### BOOKS

The Revised Edition of the **New Metal Worker Pattern Book** by Kittridge and Associates is one book that should be in every shop. As a reference book alone it is indispensable. Over 500 9x11-inch pages with 895 illustrations. It covers the principles underlying practically every problem that is likely to come up in daily practice. Beginning with the selection and use of drawing tools, the author explains linear and geometrical drawing so clearly that one who has had no previous knowledge of arithmetic or drawing may understand these essentials and apply them. The most approved methods of pattern cutting are also given in the course of the work... Price, \$6.00, postpaid. Order from the Book Dept., **AMERICAN ARTISAN**, 139 N. Clark St., Chicago, Ill.

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Wanted by a large department store chain for plumbing, heating, hardware and paint department. Permanent position, with opportunities for advancement, for men who are qualified by experience to plan and figure plumbing, heating and furnace jobs and have complete knowledge of the operation of a country hardware department.

All replies must be complete as to experience, age, past and present salary. Address G-530, **AMERICAN ARTISAN**, 139 N. Clark Street, Chicago, Illinois.



### SEND FOR FREE SAMPLES TODAY

Do a quicker, better elbow wrapping  
job—make a better profit  
by using—

"It's tough  
when it's wet—  
it's white when  
it's dry."

### ASBESTOS ELBOW WRAPPERS IN CONTINUOUS ROLL FORM

It's the modern way of wrapping elbows. Each roll contains segments for covering 25 complete elbows. Made for 8, 9, 10 and 12 inch four piece 90 degree elbows.

Non-Con-Dux Asbestos Elbow Wrappers speed up the job—make neater jobs and save wasteful cutting.

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WE ALSO MANUFACTURE CORRUGATED ASBESTOS PAPER AND  
INSULATION FOR STEAM AND WATER JOBS

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## PATENTS

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Patent Attorney

Barrister Bldg., WASHINGTON, D. C.

### WANTED

Capable experienced retail furnace salesman by distributor in Chattanooga, Tennessee, for a popular priced line of both steel and cast iron furnaces. This salesman will be made Manager of this department, having charge of furnace sales, repair work, and cleaning furnaces and boilers by vacuum. Territory will consist of some 20 counties with Chattanooga as center. Must be able to lay out jobs, prepare working sketches and give general supervision to installations. Excellent opportunity for right man. Give full information in reply, together with a list of references. Address H-530, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

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Tell Us What You Have to Trade in and What You Want  
to Get and We Will Quote You On

### "Interstate" New and Used Equipment

All Prices Have Been Reduced for Quick Turnover—  
Over 500 Individual Machines Ready to Ship

Write for Bargain Bulletin

### INTERSTATE MACHINERY COMPANY

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This 1930-31 Is Your Greatest Opportunity

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| <input type="checkbox"/> Specialized Short Sheet Metal Courses.   | <input type="checkbox"/> Air Conditioning for Fan H. & V. Eng.    |
| <input type="checkbox"/> Heating Ventilating Engineering.         | <input type="checkbox"/> Contracting and Estimating.              |

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ST. LOUIS, MO.

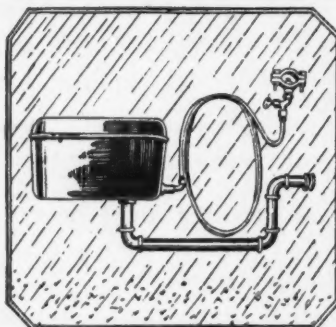
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AUTOMATIC HUMIDIFIER

Your humidifier requirements  
will have immediate attention

Prompt shipments—  
Fair prices

J. L. SKUTTLE COMPANY  
DOWAGIAC Lock Box No. 60 MICHIGAN



Mention AMERICAN ARTISAN in your reply—Thank you!

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would like one or two good lines for Western coast. Can guarantee real service. Address J-530, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

### Manufacturers Agents

Wanted to sell our furnace cement, roofing paint and cement and calking compound. Our consistent trade paper advertising is creating demand. Exclusive territory given with liberal commission. Address B-530, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

### TOOLS AND MACHINES

Wanted—An eight or ten foot hand or power used brake to bend  $\frac{1}{4}$ " plate. Address Jacob Brenner, 45-47 Third Street, Fond du Lac, Wisconsin. C-530

Wanted—One 8' Cornice brake 14 or 18 Ga. and lighter. Address J. R. Wright, Audobon, Iowa. R-529

### MISCELLANEOUS

We are open for an Exclusive Agency on Roof Paint in the states of New York and New Jersey. Address Stove Manufacturers Corporation, 184 Mulberry St., Newark, N. J. E-529





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# Rain-Snow-Sleet!



THE "Quaker City" Double Seamed Reinforced Corner Miter is built to withstand the extreme ravages of the weather. The seam is extra wide and the exclusive reinforced corner allows for expansion and contraction. Strongly built of the best materials—Galvanized Steel, Armco Iron, Toncan Metal or Copper.

It will pay you to use this, the most serviceable miter enabling you to render greater satisfaction and make a better profit.

The Quaker City Miter comes neatly packed

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If your jobber cannot supply you promptly, order direct, sending us your jobber's name with your order.

*Made by the makers of the famous "Quaker City" line of  
End Pieces, Outlets and Caps*

**BERGER BROTHERS CO., 229 to 237 Arch St., PHILADELPHIA**





See the new single tin SELFLOCK Wall Pipe . . . with the end lock that is as strong as the pipe itself! An entirely new and complete line of MILCOR single tin wall pipe and fittings for first and second floor use. No tools, no solder, no sheet metal screws, are needed.

## This NEW CATALOG Saves Time in Estimating!

Again Milcor leads the way in new developments in furnace pipe and fittings . . . and describes them completely in this new catalog.

Useful and practical data on warm air heating is included in this new book. The complete Milcor line is illustrated and described in detail.

You pay no more for the exclusive features offered by Milcor. Be sure you become acquainted with them.

Make this new catalog your estimating and buying guide. Fill in the coupon, now.

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1417 Burnham St., Milwaukee, Wis. Canton, Ohio  
Chicago, Ill. Kansas City, Mo. La Crosse, Wis.

Sales Offices: New York, 418 Pershing Square Building; Boston, Mass., 726 Little Building; Atlanta, Ga., 297 Bona Allen Building; Minneapolis, Minn., 642 Builders Exchange Building; Little Rock, Ark., 104 W. Markham Street

**MILCOR**  
PRODUCTS

MILCOR STEEL COMPANY  
1417 Burnham Street, Milwaukee, Wisconsin

Please send me a copy of your new catalog No. 30.

Name.....

Address.....

City..... State.....



